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THE AUTONOMIC MANIFESTATION AND PERIPHERAL CONTROL OF PAIN ORIGINATING IN THE UTERUS AND ADNEXA*

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CINCINNATI

GENERALITIES RELATIVE TO THE AUTONOMIC NERVOUS PHENOMENA

The word "autonomic" as applied to the manifestations of pain of visceral origin, signifies the expression of that pain in some superficial muscle or muscles rather than in the viscus in which it has its initial causation. The phenomena clearly imply the existence and coöperation of three distinct factors, namely:

1. Some more or less profound disturbances, functional or organic, of certain of the viscera.
2. The transmission of a painful impulse, thus originated, over or through what Head[1] has designated as the autonomic nervous system.
3. The registration of that impulse and its expression as pain in the muscle or muscles to which the respective external or peripheral autonomic filaments (muscle nerves) are distributed.

It is through this mechanism and by the coöperation of these factors, according not only to Head,[1] but to Ross[2] and Mackenzie[3] that the phenomenon of muscular rigidity occurs autonomically, for example, over an inflamed appendix vermiformis or over an impacted gall-bladder, or over the seat of an intussusception.

Through this same mechanism in each of the instances given, and for manifest reasons, the intensity of the pain and of the muscular rigidity are relative each to the other, while both are relative to the intensity of the causative change in the viscera.

The peripheral control of pain thus originating and thus manifesting itself implies either one of two hypotheses. The first is that if an algetic impulse can be telegraphed, as it were, from viscus to muscle, it would seem possible to telegraph an analgetic impulse back over the same wires, i. e., from muscle to viscus. The second hypothesis is that if the functions of the external autonomic filaments can be inhibited the algetic impulse cannot reach the muscles and must consequently fail of expression as pain.

Whether an algetic impulse originating in a given viscus *per se*, or whether, after transmission through the autonomic nerve filaments, it is expressed exclusively in or through its corresponding muscles, is a theoretical problem, the solution of which is quite apart from my present purpose.

AUTONOMIC AND OTHER NERVOUS RELATIONS OF THE UTERUS AND ADNEXA

The application of these general principles to conditions originating within the pelvis necessarily involves at least a brief consideration of the autonomic relations of the intrapelvic organs.

I find that the more convenient way to present this subject is to divide the genital organs into three zones, viz.:

1. The first or upper genital zone, consisting of the fundus of the uterus, the Fallopian tubes and the ovaries. To this zone are supplied:
   - A. Sympathetic branches from the plexus hypogastricus through the plexus arteriæ ovaricæ in the broad ligaments.
   - B. Sensory branches from the twelfth dorsal and from the first and second lumbar nerves.
   - C. Autonomic filaments afferent from the zone indicated to the spinal centers.

   These filaments occur coincidently with the sympathetic and reach the spinal cord through the communicating branches in the lower dorsal and upper lumbar regions. Their terminal distributions are to the intertransversæ and to the quadratus lumborum and to the two psoas muscles.
2. The second or middle genital zone, consisting of the cervix uteri, to which are supplied:
   - A. Sympathetic branches from the lower ganglia.
   - B. Sensory branches from the second, third and fourth sacral nerves.
   - C. Autonomic filaments efferent from the cervix to the spinal centers through (a), the communicating branches of the sympathetic, (b), the second, third and fourth sacral, distributed to the two glutei muscles, to the quadratus femoris, the coccygeus, and the levator ani muscles.
3. The third or lower genital zone, consisting of the external genitalia including the vagina, is not considered in this connection.

THE RELATION OF AUTONOMIC NERVOUS PHENOMENA TO THE DIAGNOSIS OF INTRAPELVIC CONDITIONS

The nervous connections of the uterus and adnexa just given, taken in connection with the autonomic function as outlined by Head,[1] have an obviously important relation to diagnosis. Familiar phenomena of pain have a more definite meaning when interpreted in the light of these fact

* Read before the Fifth International Periodical Congress of Obstetrics and Gynecology, St. Petersburg, Russia, Sept. 22-28, 1910.

1. Head, Henry: Brain, 1893, Part 1, p. 1.
2. Ross, James: Brain, 1888, x, 333.
3. Mackenzie, James: Brain, 1893. xxi, 321.

I have been able in this way to associate pain in the costo-iliac interval and in areas representing the distribution of the posterior ramus of the twelfth dorsal nerve with conditions in the upper genital zone as follows, viz., (a) a small submucous nodule in the fundus of the uterus, (b) adhesions of the fundus uteri in the cul-de-sac of Douglas, (c) fixation (hysteropexy) of the fundus uteri to the abdominal wall (an operation never done by myself), (d) premenstrual engorgement of the uterus and ovaries, (e) cirrhosis with follicular degeneration of the ovaries, (f) distention of occluded Fallopian tubes, and (g) ectopic pregnancy.

I have likewise been able to demonstrate the relationship of pain in the ileogluteal area, supplied by the posterior rami of the second, third and fourth sacral nerves, with conditions in the middle genital zone, chief among which are the following, viz., (a) painful cicatrix of the cervix, (b) cervical erosion, (c) intramural myomata of the cervix and (d) cystic Nabothian follicles.

INTRAPELVIC CONDITIONS CAUSING AUTONOMIC MANIFESTATIONS OF PAIN

From the observations just recorded and from a general survey of the subject I am impressed with the probability that, in the majority of instances, more or less definite autonomic manifestations of pain will be found in conditions as follows, viz.:

1. In the uterus: malformations; certain new growths, both hyperplastic and inflammatory; certain premenstrual congestions; mechanical occlusions; displacements; infections.
2. In the Fallopian tubes: infections; occlusions with distensions; ectopic pregnancy.
3. In the ovaries: displacements; pressure from superimposed viscera; infections; tunicæ adventitiæ; adhesions; follicular degenerations; dermoids.
4. In the cervix: cicatrices; erosions; infections; distortions; neoplasms.
5. In pregnancy, complicated with neoplasms or neurasthenia or both.
6. In parturition, in which, ordinarily, the autonomic manifestations of pain shift from the upper to the lower (superficial autonomic) zones coincidently with the progress of the labor.

THE PERIPHERAL CONTROL OF AUTONOMIC PAIN OF INTRAPELVIC ORIGIN

If, from what I have already presented, we are to assume that pain originating in the uterus or adnexa is not pain until it is registered in the form of tonic contraction of the autonomically associated muscle or muscles, it would seem that inhibition of the autonomic function of the respective muscle or muscles would inhibit the manifestation of the pain. I have, in fact, successfully reduced this postulate to practice in a sufficient number of instances to convince me of its general tenability. It is accomplished, in brief, by deep analgetic injections into the substance of the affected muscles themselves. Whether the results depend on the analgetic agent or agents used in these injections, or on the water used, or whether both elements are of importance may will be taken up by the experimental pharmacologist.

I wish here to record, however, that, something like forty years ago the late Prof. C. G. Comegys of Cincinnati successfully inaugurated the practice of treating lumbago by injections of distilled water into the substance of the quadratus lumborum muscle. The practice is yet kept up with uniform success by my colleague, Prof. F W. Langdon[4] of the University of Cincinnati with whom, in these cases, aquapuncture is a matter of routine in his wards. In later years, following the introduction of cocain and its congeries of analgetic agents, and especially since the excellent work of Schleich[5] some fifteen years ago, there has been a tendency to rely on the injection of these agents rather than on the infiltration of water for the inhibition of nervous and muscular irritability.

It would seem, however, that in such conditions as lumbago, as shown by Langdon,[4] and in sciatica, as shown by Lange,[6] Sicard,[7] Hecht[8] and other neurologists, there is an increasing tendency to recognize the water as the relatively more important analgetic element of the solution. The three last-named authors are inclined to the use of water in the form of normal salt solution because of its assumed greater isotonicity. Then, too, we must recognize that another and a chief object that they have in using perineural infiltration of large quantities of water in sciatica is mechanically to break up inflammatory connections between the nerve and adjacent structures. Langdon insists, however, that it seems plausible to him "that distilled water would be effective and probably in smaller quantity since the 'affinity' of the nerve tissues (containing salts) would be greater, perhaps, for pure water"—a consideration which offers a rational explanation of his success in the treatment of lumbago by aquapuncture. But without going into this aspect of the subject, and without assuming for a moment that either lumbago or sciatica is autonomic in cause or character—although the former may be—both of these conditions present the phenomenon of muscular irritability and, in that particular, become important criteria for the control of muscular irritability from whatever cause it may occur.

THE RÔLE OF THE AUTONOMIC NERVES IN THE TREATMENT OF VISCERAL PAIN

It seemed to me,[9] after some study of this question, that if the autonomic nerves conveyed an irritating impulse from affected viscera to the surface, those nerves might be employed for telegraphing a corrective impulse back from the surface to the affected viscera. In other words, if, as Nothnagel and Lennander[10] insist, visceral pain is really pain manifested chiefly in the phenomenon of muscular hyperalgesia, why would not the inhibition of the muscular hyperalgesia inhibit in turn the visceral pain? Acting on this theory I promptly had an opportunity to put it to test. I had done a gastro-enterostomy to control pain and rigidity—epigastric hyperalgesia—following which I had applied heat to relax the muscles and given morphin with which to benumb the sensorium. Thirty-six hours of this treatment had failed to bring relief and the patient was crying to be reanesthetized. I therefore injected into the belly of the rectus abdominis muscles at several points on either side of the incision a solution of cocain and morphin in the form of a Schleich solution. Within twenty minutes the patient dropped into a comfortable sleep

4. Langdon: Personal letter to the author.
5. Schleich: Schmerzlose Operationen. 1895.
6. Lange (Leipsic): Deutsch. med. Wchnschr., 1908, No. 6.
7. Sicard: Quoted by Hecht: The Treatment of Sciatica by Deep Perineural Infiltrating Injections of Salt Solution, THE JOURNAL A. M. A., Feb. 6, 1909, p. 444.
8. Hecht, D'Orsay: THE JOURNAL A. M. A., Feb. 6, 1909, p. 444.
9. Reed: New York Med. Jour., March 5, 1910.
10. Lennander, K. G.: Abdominal Pain, Especially Pain in Connection with Ileus, THE JOURNAL A. M. A., Sept. 7, 1907, p. 836.

and from that time on had no recurrence of epigastric hyperalgesia. The pain following hysterectomies, oophorectomies, and other uncomfortable operations on the uterus and adnexa have been similarly relieved by deep muscular injections into the hyperalgetic areas. In a number of cases I have had entirely satisfactory results from the use of the cocain alone, and latterly with novocain, thus showing that it is sufficient to overcome what I look on as entirely normal but none the less painful muscular irritability, and to do so without hypnotics addressed to the general consciousness. Even in some instances, as in a case of a firm intra-uterine pack following a curettage, in which the superficial hyperalgesias were also present, the inhibition of the muscular irritability within the involved superficial areas was followed also by cessation of the pain referred by the patient to the uterus. From this experience, interpreted in the light of the facts which I have presented, I arrive at the object that I had in preparing this paper, and that was to emphasize, by brief summary, the treatment of various pains of visceral origin.

TREATMENT OF POST-OPERATIVE, PARTURIENT AND OTHER PAIN OF VISCERAL ORIGIN

1. Visceral pain, so far as the abdomen, pelvis and thorax are concerned, is expressed chiefly but not exclusively in the autonomic algetic areas of the protective walls covering the respective viscera, such algetic areas corresponding in extent with the peripheral distribution of the autonomic nerves coincidently with the peripheral distribution of the respective spinal nerves in the muscles and subserous connective tissue.

2. These distributions can generally be determined clinically by determining the area of partial hyperalgesia.

3. The pain itself, consisting chiefly of hyperexcitation of muscle irritability, can be partially and, as a rule, entirely, inhibited by inhibiting the muscle sensibility in the hyperalgetic areas.

4. The same principle applies to the peripheral control of pain originating in the parturient uterus, with the difference that the infiltration of succeeding muscle zones must be practiced with the corresponding advance of the delivery.

METHOD OF TREATMENT

My method of treatment, briefly stated, is as follows:

1. Have prepared a standard analgetic and local anesthetic mixture as follows:

	gm. or c.c.
Morphin hydrochlorid	0|01
Novocain	0|04
Scopolamin	0|015
Normal salt solution	1|

This represents a single dose which, before administration, is further diluted with physiologic salt solution to permit of its distribution by numerous deep punctures with an ordinary hypodermatic needle into the hyperalgetic areas.

2. For analgesia, after thoroughly cleansing the integument, all of the mixture is injected into the muscular layer, several punctures being employed and care being taken to make them at points that approximately define the circumference of the hyperalgetic area. The analgetic effects will be realized within from five to ten minutes, and in consequence of the presence of the scopolamin, will be continued often from six to eight hours, while in some instances they will be permanent.

3. For local anesthesia, the same solution is used in the same way, with the exception that it is discharged into the subcutaneous connective tissue at points that approximately define the circumference of the area that it is desired to anesthetize. The sensibility will disappear in from five to eight minutes and will remain absent for a period varying from an hour to three hours.

4. The infiltration treatment practiced by Schleisinger, Hecht and others in sciatica involves the injection of large volumes of the solution, thus, (a) 10 to 20 c.c. of the normal salt solution reduced to zero (Centigrade); (b) 80 to 100 c.c. of normal salt solution at the temperature of the body; (c) 60 to 120 c.c. of beta-eucain solution at the temperature of the body. Langdon's method of treatment by pure aqueous infiltration involves the use of smaller volumes of fluid.

DISCLAIMER

Now that I have presented briefly this phase of the manifestation and control of visceral pain, and in view of the tendency to give a wider scope than is intended to a single idea, I wish, in conclusion, to make a few points clear. In the first place (1) the details of the autonomic phenomena are only beginning to be understood; (2) while I believe that these phenomena when once understood may be classed among the clinical constants, I do not believe that they can have a significance that will justify failure to consider all other diagnostic factors; (3) and I recognize the possibility and, under certain obvious circumstances, the desirability of temporary control of pain by the method I have indicated. I do not recognize the possibility that it can ever supplant the rational curative method which always implies the removal of the cause for the cure of the effect.

THE OPEN TREATMENT OF FRACTURES

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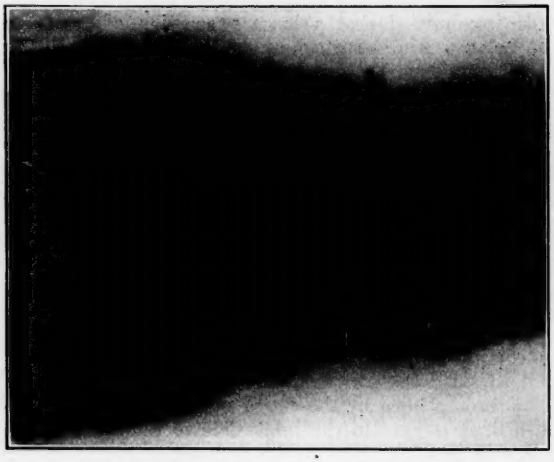
It is admitted that a large proportion of fractures can be successfully treated by manual reduction and by the ordinary external appliances, designed to retain the fragments in place; but we are all familiar with the difficulty of securing and maintaining perfect reduction by these methods. Further, we know now that in many cases in which we have felt sure of having secured a satisfactory reduction, a subsequent radiograph has too frequently proved the error of our conclusions, and shaken our confidence in the time-honored tests of mensuration and palpation. Particularly is this true in fractures of the femur and humerus, in which we have to contend with a large amount of surrounding soft tissues, and especially when the fracture is oblique or comminuted. It is safe to venture the statement that in such cases an anatomic reduction is seldom, if ever, accomplished by the closed method; and if accomplished, it is next to the impossible to retain the fragments in position.

The recognition of these facts has led surgeons to resort to the apparently more radical procedure of the open treatment, which renders reduction comparatively simple and makes it possible to apply one of the many mechanical devices intended to retain the fragments in position. These devices are numerous, as the archives of surgery give evidence; but they may for practical consideration be divided into two classes, viz., those to be removed after repair of the fracture, and those to be left *in situ*.

The former have the apparent advantage of leaving no foreign body permanently imbedded in the tissues. The danger of trouble from leaving an aseptic metallic substance at the seat of the fracture has been greatly overestimated, however, and is not to be compared with

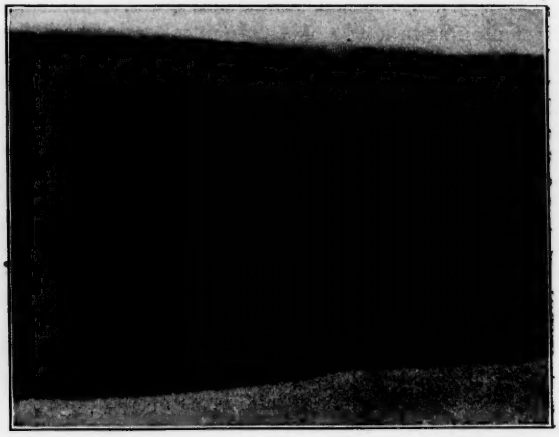
the increased danger of infection common to all devices designed for removal after union has been established. Further, it is a physical impossibility to secure perfect immobility with any of this class of appliances, on account of the necessary distance of the fixation bar from points of application to the fragments. Their external portion makes dressings more difficult, and, if the limb is accidentally harshly touched, causes the patient pain with more or less disturbance of the fragments.

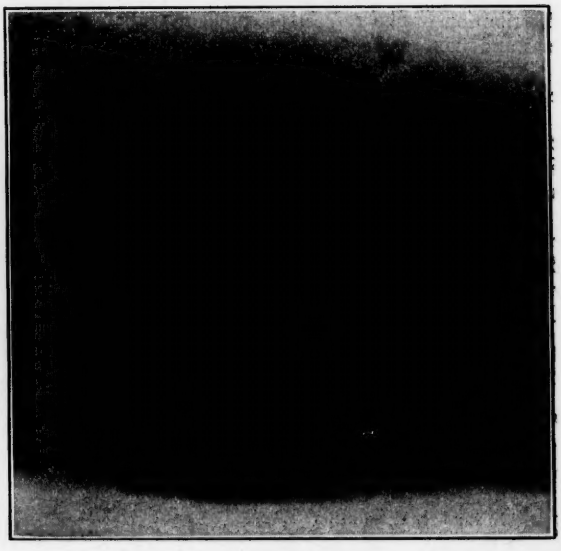
Of the latter class, devices designed to be left *in situ*, none is to be compared with the steel plate devised by Mr. Arbuthnot Lane in ease of application, the immediate perfect immobilization of the fragments and their satisfactory retention in position. They seldom cause any irritation, and, if it becomes necessary to remove them, this is not difficult.



Figs. 1 and 2.—Compound infected fracture of radius and ulna, with displacement of the lower fragment of the radius; the bones are shown from two different positions (Case 1).

In using these plates there are several points which are worthy of consideration. Those of scrupulous asepsis and careful handling of the soft tissues are so well recognized as hardly necessary to be mentioned. Nothing but the judgment of the operator and the special features of the individual case can determine the best time to operate. It is generally better to wait, however, until the tissues have recovered somewhat from the devitalizing effect of the traumatism and attained a certain degree of resistance to infection. The selection of the proper drill for the size of the screw is important. A drill which will make a hole just large enough to allow the screw to be driven without splitting the bone gives the best results. It is not necessary, however, to have the hole so small as to make it difficult to drive the screw "home" with the ordinary screw-driver. By experimenting on a fresh beef-bone one can easily select the drill adapted to the screws to be used, which should have a "wood" thread with medium chamfer. The retention of the fragments in position while the operator is drilling the first two holes is not always an easy task for the assistant, and the special forceps designed by Mr. Lane for holding the fragments is undoubtedly superior to the ordinary forceps, although one can get along very well with the latter. In my judgment, a fair trial of the open treatment of properly selected cases of fracture will verify the following conclusions:





Figs. 3 and 4.—Two views of fractures shown in Figure 1 after treatment by Lane's plates, showing perfect adjustment and alignment of the fractures. The dimness of the plates is due to their having been made of aluminum.

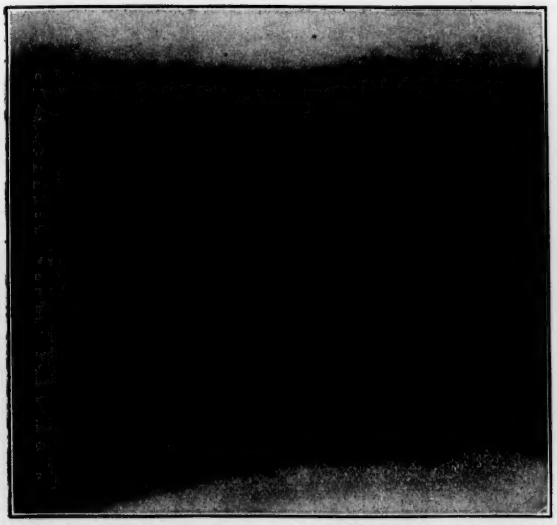


Fig. 5.—Fracture of left femur at middle of lower third with the usual backward displacement of the upper end of the lower fragment (Case 2). Reduction was thought to have been accomplished, but this conclusion was erroneous, as is shown by the radiograph.

Fig. 6.—Reduction, by open operation and the use of the plate, of fracture shown in Figure 5.

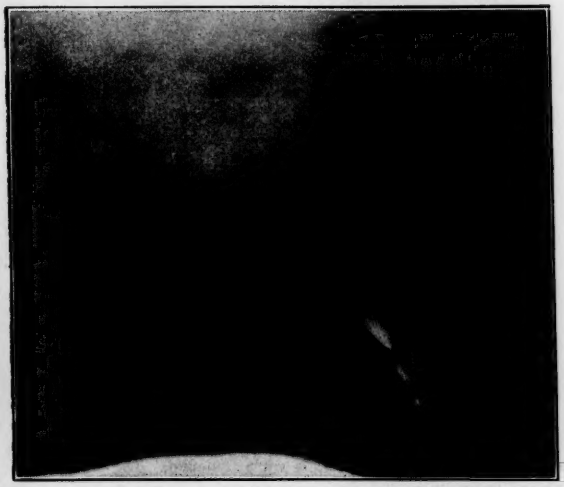


Fig. 7.—Fracture of the left humerus five inches above elbow involving the musculospiral groove, with marked forward displacement of the lower fragment (Case 3).

Fig. 8.—Reduction of the fracture shown in Figure 7, by the open method; alignment not perfect, but improved by splints and compresses.

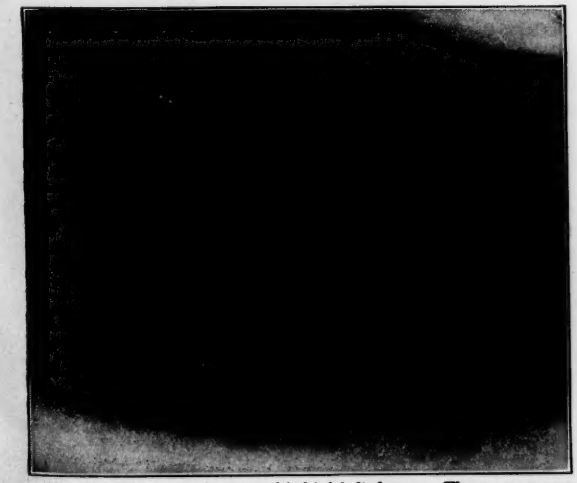


Fig. 9.—Fracture of upper third of left femur. Three unsuccessful attempts were made to reduce this fracture by the closed method (Case 4).

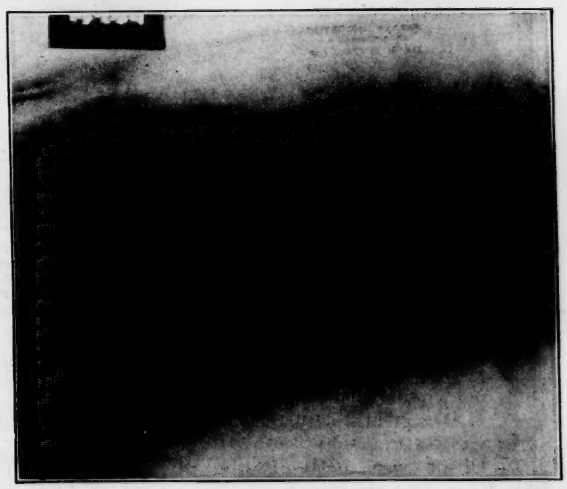


Fig. 10.—Reduction, by open method, of fracture shown in Figure 9, showing perfect alignment.

1. The open treatment of fractures insures practically anatomic reduction.

2. We have overestimated the danger of making a compound out of a simple fracture.

3. The Lane plate is the simplest and most efficient fixation device yet designed.

4. It insures immediate immobilization, which in turn means rapid repair and reduction of pain to a minimum.

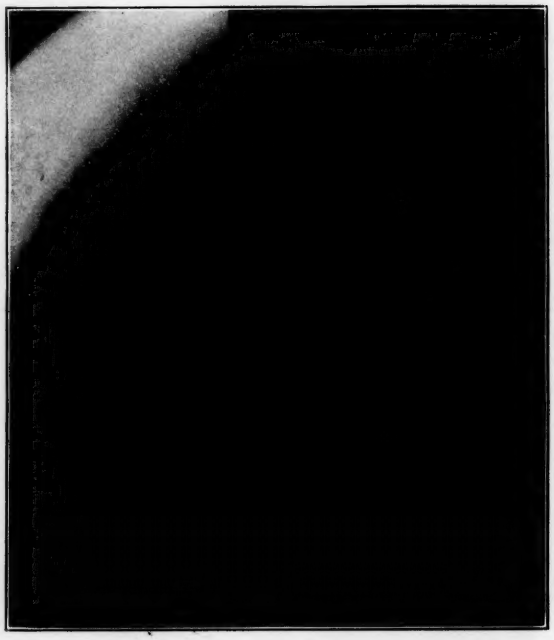


Fig. 11.—Comminuted fracture of left humerus with marked displacement and hematoma in axilla and on chest (Case 5).

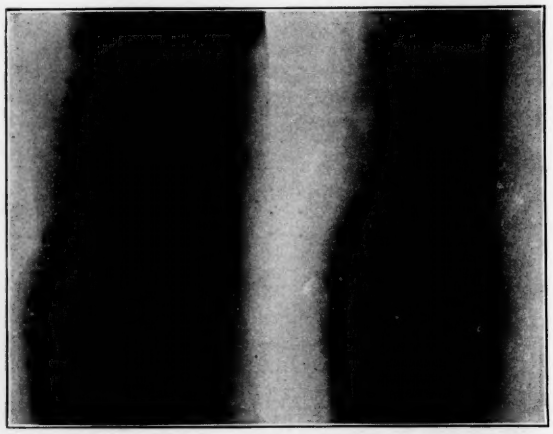


Fig. 13.—Compound, comminuted fracture of the left humerus with crushing of the soft parts, caused by being run over by a loaded wagon (Case 6). Fragments of bone were removed and the fracture reduced and held in place by the bone plates. The wound healed without infection.

5. Its application is easier and requires less mutilation and smaller incision than the use of wire.

6. It is a great aid in the management of compound infected fractures.

7. Direct mechanical fixation of fractures greatly simplifies after-treatment.

8. The *x*-ray has shaken our confidence in manual reduction, and will force us to more accurate methods.

In support of these conclusions I wish to report six cases in which operation was done this year:

CASE 1.—Man, aged 34. Compound infected fracture of left radius, with inward displacement of lower fragment and fracture of ulna without displacement (Figs. 1 and 2). Arm, forearm and hand were greatly swollen from infection of a lacerated wound over the seat of the fracture, which prevented

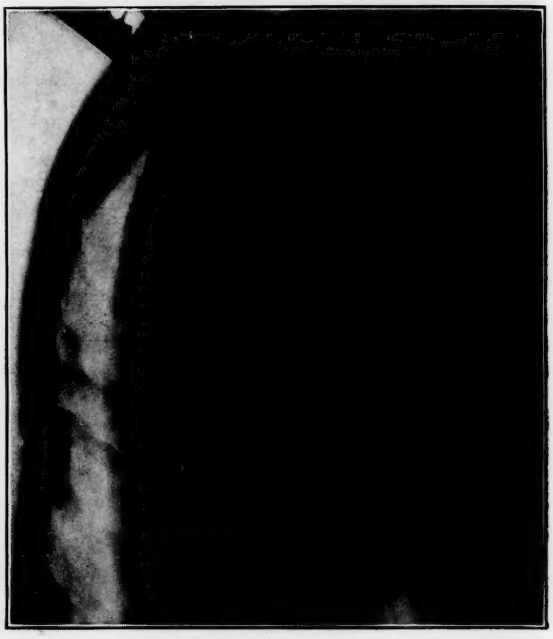


Fig. 12.—Reduction, by open method, in case shown in Figure 11, some fragments of bone being removed, as shown in the radiograph.

any splinting. The limb was bound in pillows for ten days and the wound infection treated with moist antiseptic dressings. Three or four days prior to operation a 10 per cent. balsam of Peru ointment was used. At time of operation the granulating wound was scrubbed with gauze and Harrington's solution until all granulations were removed. The wound was closed entirely, except the space occupied by a small cigarette drain, which was removed two days afterward. Union by first intention was obtained. The result as to reduction is shown in the radiographs (Figs. 3 and 4).

CASE 2.—Woman, aged 49. Fracture of left femur at middle of lower third, with the usual backward displacement of upper end of lower fragment (Fig. 5). Reduction was attempted and thought to be satisfactory. Radiograph proved this conclusion to be erroneous, or there was subsequent displacement. Considerable difficulty was experienced at the operation to accomplish reduction. After application of plate convalescence was uneventful. The incision healed by first intention. The patient walked on the limb nine weeks after operation, and measurement shows no shortening (Fig. 6).

CASE 3.—Man, aged 44. Fracture of left humerus about five inches above the elbow, involving the musculospiral groove. Several attempts were made at reduction, with and without anesthesia. Radiographs revealed marked forward displacement of the upper end of the lower fragment (Fig. 7). At operation the musculospiral nerve was fixed in the soft tissues by catgut sutures. Convalescence was uneventful. Union of operation wound took place by first intention. Alignment in this case was not as good as it should have been, but was improved by splints and compresses (Fig. 8).

CASE 4.—Boy, aged 13. Fracture of upper third of left femur (Fig. 9). Three unsuccessful attempts were made at

reduction. Reduction and alignment are shown by radiograph to be almost anatomic (Fig. 10). Convalescence was uneventful. Union occurred by first intention. There was no shortening.

CASE 5.—Man, aged 32. Comminuted fracture of left humerus, with marked displacement (Fig. 11). There was a large hematoma extending into the axilla and on the chest anteriorly and posteriorly. Operation was done nine days after the injury. I considered it safe to wait until the tissues had gained some resistance. Several fragments of bone were removed at the operation. Their absence is well shown in the radiograph (Fig. 12). Convalescence was uneventful. Union by first intention took place. The patient undressed and dressed himself without assistance thirty-two days after the operation.

CASE 6.—Boy, aged 18. Compound comminuted fracture of the left humerus, caused by passage of two wheels of a loaded coal wagon (7,450 pounds) over the member. Operation was performed two days after the injury. The patient traveled 150 miles from an inaccessible part of the state. The comminuted fragments were removed. The extensor muscles of the arm were severed by the crushing force of the wheels. The musculospiral nerve was tucked into the lower segment of the triceps. There was no infection of wound, which healed kindly as soon as the devitalized soft parts separated. Alignment is well shown in the radiograph (Fig. 13). There was some paresis of the flexors and extensors of the forearm, but at the time of the last report (nine weeks after the injury) power was rapidly returning.

1723 Tremont Place.

A METHOD OF TONSILLECTOMY BY MEANS OF A GUILLOTINE AND THE ALVEOLAR EMINENCE OF THE MANDIBLE

GREENFIELD SLUDER, M.D.

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ST. LOUIS

I wish to describe a method of tonsillectomy which, so far as I can learn, has not heretofore been described or used. The essential and distinctive feature of this method is the fact that it moves the tonsil completely out of its normal bed in the forward and upward direction and then utilizes one of the anatomic markings of the lower jaw as a vantage-point in putting it through the aperture of the guillotine. This anatomic marking is the well-defined eminence just above the mylohyoid line, produced by the last-formed molar tooth in its socket (Fig. 1, a, Fig. 2, I, a, Fig. 2, II, a), which is rendered even more prominent in the mouth by the tissues of the gum. In childhood the posterior, unformed molar as it lies imbedded in the alveolus helps to make the eminence (Fig. 2, II, a). This marking has not been given a name in any of the treatises on anatomy. I have taken the liberty of naming it "the alveolar eminence of the mandible," in order to facilitate the description of this procedure.

The instrument used (Fig. 3, I and 3, II) is a modification of what I have nearly always heard called the "Mackenzie guillotine"; but it occasionally has been called the "English guillotine" to distinguish it from the "Mathieu" or "French guillotine." Sir Morell Mackenzie,[1] however, relates that the instrument which nowadays bears his name is a modification of the one described by Dr. Physick[2] of Philadelphia in 1827, the difference being that he (Mackenzie) made the handle reversible, so that it could be applied to either side of the shaft. In this way he facilitated its use by surgeons who used the one hand for removing both tonsils. He also narrates that Dr. W. B. Fahnestock[3] of Lancaster, Pa., in 1832, first described the modification which consists of a circular aperture and a transfixing needle, with a ring knife to cut on the pull (the

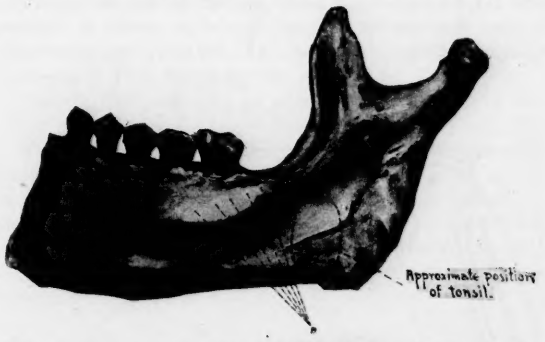

Fig. 1.—Inner surface of the right half of the mandible, showing the alveolar eminence, A, and its relation to the usual position of the tonsil.

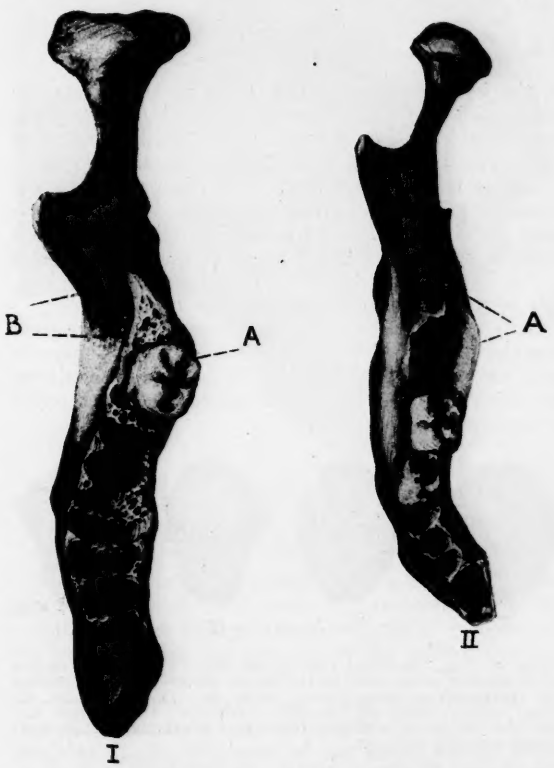

Fig. 2.—I. Right half of a mature mandible seen from above, showing alveolar eminence, A, with fully cut third molar and buccinator ridge B. II. Right half of young mandible seen from above, showing uncut third molar and the part it takes in the formation of the alveolar eminence A.

"French guillotine") and that Guersant[4] in 1864 changed the shape to an ellipse and at the suggestion of Velpeau added the elevating prongs. He furthermore states that the guillotine idea was first published

1. Mackenzie, Morell: Diseases of the Pharynx, Larynx and Trachea, New York, Wm. Wood & Co., 1880.
2. Physick: Am. Jour. Med. Sc., i, 262. Quoted by Mackenzie.
3. Fahnestock, W. B.: Am. Jour. Med. Sc., xi, 248. Quoted by Mackenzie.
4. Guersant: Hypertrophie des amygdales, Paris, 1864. Quoted by Mackenzie.

by Dr. Benjamin Bell[5] in 1783 in his description of the uvulatomes used in England in the latter part of the eighteenth century.

The guillotine which I use (Fig. 3, I and II) is therefore a modification of that of Dr. Physick, which consisted of a shaft of metal with a circular aperture at its distal end through which the tonsil was inserted, and cut through by a blade pushed across the aperture. I have altered the original model in order to accomplish two definite objects: (1) to get greater strength

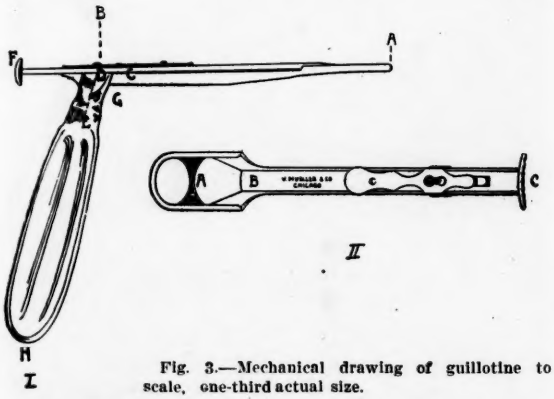

Fig. 3.—Mechanical drawing of guillotine to scale, one-third actual size.

in the instrument; and (2), to increase the leverage employed in its use. These are attained (1), by doubling the thickness of the shaft; and (2), by shortening its length, and making the handle longer. I greatly prefer an elliptical aperture. The usual model of Dr. Physick's guillotine at present to be found in the instrument shops is the Mackenzie modification, which has a round aperture. In a few shops in the United States it has been made with an elliptical aperture the long axis of which is transverse to that of the shaft.

In this operation a correct instrument is of very great importance. I believe it to be of far greater importance than is usually the case in surgical procedures. For this reason I feel that an accurate description ought to accompany its pictures.

Fig. 4.—Tonsil removed from young adult: I, internal surface as it appears while still in the grasp of the guillotine, having the appearance of being turned inside out; II, same tonsil, external surface, with the capsule invaginated; III, internal surface after its parts have been replaced; IV, external surface after capsule has been replaced.

DESCRIPTION OF THE GUILLOTINE

(In the following use of terms I assume that the surgeon is holding the instrument, with its aperture from him). It is made entirely of metal. It measures 13. cm. from *A* to *B* (Fig. 3, I) which is from 2 to 4 cm. shorter than the models usually found for sale. The angle at which the shaft and handle join, *C, D, E,* is 115°. This is the most comfortable position for the handle in the surgeon's hand; and sacrifices almost none of its leverage. The handle should be large and rough, measuring 11.5 cm. from its free end *H* to its junction with the shaft *G*, and should be of a shape that is comfortable in the grasp, thus facilitating the use of strength. The shaft is thin, 3 mm., at its distal end where the aperture is cut; but is reinforced on the handle side, proximal to the aperture, by another piece of steel of the same or greater thickness, they being welded together and the handle attached to these. Special attention should be paid to details in order to make the instrument as strong as possible, such as putting a bolt through the full length of the handle in addition to its being welded to the shaft. Its strength should be so great that the shaft cannot be bent or the handle broken off by the power of an ordinary man. The blade is 2.5 mm. thick. Its proximal end, *F*, when closed (Fig. 3, I, is drawn with the blade open) should extend 2.5 cm. beyond the distal side of the handle at its attachment to the shaft *G*. Its cutting edge should be made dull for the reason that it will then readily follow in the connective tissue between the capsule of the tonsil and the constrictor of the pharynx on which it lies, whereas a sharp edge easily cuts through the tonsil or the constrictor. Less bleeding follows from the wound of a dull blade, which is an additional advantage. The edge should be made by grinding the blade 2.25 cm. back (Fig. 3, 11, *A, B*), because by so thinning the cutting end of the blade the field of operation is

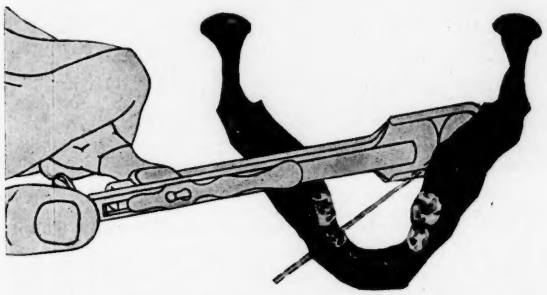

Fig. 5.—A young jaw showing guillotine in position. The dotted lines show the usual position of guillotine for mature jaws.

made wider, as will be shown later. The proximal end of the blade is provided with a cross-bar *F*, which should be comfortable under the thumb so as to permit of great pressure without hurting the surgeon's hand. A ring may be substituted for the cross-bar and the surgeon's thumb inserted through it. The assumed advantage in this is that, in case he should not apply the instrument perfectly, he could readily withdraw the blade by means of his thumb without removing the instrument from its position, and immediately push it down again. This might be repeated until he had the tonsil properly through the aperture, with small loss of time; but he soon learns to do this with the cross-bar too, so at present my feeling is that this must be a matter of individual choice.

The blade must slide to and fro with the least possible friction. The aperture is elliptical, with its long axis transverse to that of the shaft. Its distal arc should be lined around with a soft metal into which the dull blade may be forced in the act of cutting through the tissues. The surgeon should have two guillotines, one with an aperture 2.5 cm. by 1.8 cm., the other 1.75 cm. by 1.5 cm. The two instruments should be alike in every measurement except the distal part of the shaft

5. Bell, Benjamin: System of Surgery, 1783, iv, 144, Plate 52, Fig. 1. Quoted by Mackenzie.

which bears the aperture; the two should be of the same great strength. If the shaft is not strong enough it will be bent slightly in the act of operating and then the blade will not slide with the ease that is required of this instrument. If the handle is not securely attached to the shaft it will be broken off during the operation.

ANATOMIC RELATIONS

In the following use of terms indicating direction I assume the body of the patient to be erect and facing the surgeon. I have already mentioned that one of the essential and distinctive features of this method is the utilization of the alveolar eminence of the mandible in manipulating the tonsil. I have also stated that this eminence is made by the internal ending of the alveolus, with the gum covering it.

It should be remembered that the tonsil lies posterior to and for the most part below the eminence, in childhood appearing much further back and much lower than in maturity. This arises from the fact that an uncut tooth is in the alveolus posterior to the one showing through the gum membrane, causing a greater elevation at this site and making it seem that the teeth are much further forward, and the tonsil lower. In cases of great enlargement of the tonsil more of it will lie even with or a part may possibly lie above the eminence. It will also extend forward, approaching the eminence from behind.

The surface of the jaw-bone posterior to and below the eminence slants downward, backward and outward at an angle that may vary considerably, but is approximately 45°—that is 45° downward and outward from the transverse, and at the same time 45° outward and backward from the anteroposterior axis. This slant arises in large part from the fact that the alveolar arch as it proceeds backward tilts more and more inward from the body of the jaw. Its posterior end faces inward as well as upward (Fig. 2, I *A*). Looking backward or downward it is seen that the ending of the alveolus lies completely internal to the line of the buccinator ridge were it prolonged as it descends on the coronoid process (Fig. 2, I *B*); and the impression thus given is that this line when carried downward represents the jaw proper and that the end of the alveolus lies internal to it. This is shown better on mature jaws. This slant is crossed by the mylohyoid line, which is well marked in maturity. On young jaws this surface is more nearly smooth, although that marking is always to be seen.

The angle of this slant is subject to considerable variation because the relation of the breadth of the alveolus to the height of the horizontal portion of the jaw (alveolus and body together) varies very much according to age. The breadth of the alveolus in the young is actually wider (3 mm. sometimes) than that of the adult. This is true for two reasons; (1) that in the young, these alveolar dimensions are made by the crown of the molar, whereas in maturity they are made by its neck; (2) that although the tooth may be through, the bone surrounding it has not yet been absorbed to the extent that it is in maturity. On the other hand the height of the horizontal portion in maturity is twice that of early life, for the reasons that the young jaw consists largely of alveolus, and that the body is added to it only by development with the years. For these reasons the angle of the slant in young jaws may rise to even more than 60° outward and backward from the anteroposterior axis (Fig. 5), and to even more than 60° downward and outward from the transverse; while in maturity these angles may be less than 45° in one or both directions. The alveolar eminence is therefore very much more prominent in the young, despite the fact that the inward tilting of the alveolus is greater in maturity than in early life. The edentulous jaw need scarce be considered in this connection, because the operation in question is rarely needed by the aged. Anatomically, however, it is usually marked by a very heavy mylohyoid line which, since the absorption of the alveolus, lies near the upper margin of the body which alone remains. There is usually a trace of the alveolar eminence still to be observed.

These differences may be accurately estimated in the living by introducing the index-finger into the patient's mouth, downward, outward and backward from the alveolar eminence pushing the soft tissues aside as far as may be necessary. It is distinctly advantageous to make this estimate just before operating in order that the direction of the guillotine may be varied to suit that individual's requirements. The buccinator ridge is frequently helpful in making this estimate.

Fig. 6.—The guillotine in position, showing its general relationship to the bones.

THE OPERATION

In order to use the alveolar eminence of the mandible as a vantage-point from which to manipulate the tonsil —that is, to use this prominence to put or help to put the tonsil through the aperture of the guillotine—it is necessary to move it completely from its normal position which is posterior to and below the eminence (see above). It must be moved forward and upward. The elasticity of the soft parts of the throat readily allow the necessary movement. In this way the tonsil will be moved out of a hollow, soft, moving bed and be brought up on to a motionless, hard hump—a solid, fixed, somewhat hemispherical convexity.

Under these altered conditions it is not difficult to place the blade of the guillotine at its base. The eminence is then sometimes found to be all that is required to hold it for a perfect adjustment of the instrument, which is done by pressing it against the bone. The prominence of the eminence then stuffs the tonsil through the aperture. Often, however, in operating, especially with a large, flat (thin) imbedded tonsil, it is

necessary to use the tip of the index-finger of the other hand to put the final bit through. If it be soft in addition to these qualities, the difficulty is increased to the fullest possibility. A firm tonsil is manipulated without difficulty, regardless of size or imbedding, provided it be not too thin (flat). Should it be soft, large, flat (thin) and imbedded, great care and some dexterity must be exercised in order to secure it entire.

Under these conditions the surgeon will find sometimes that he has removed only the central portion of the capsule with tonsil tissue surrounding it. A little more familiarity with the method and possibly a little greater dexterity in managing the instrument will usually permit him to secure it entire. (I can, however, picture to myself a tonsil that is so soft, thin and spread out that it could not be removed entire with one stroke, despite all the care and dexterity that might be exercised; but it must needs be rare.)

Under conditions presenting difficulties a perfectly satisfactory guillotine is indispensable. Precise knowledge of the topography and all the variations is necessary at all times.

THE OPERATIVE PROCEDURE

The use of this type of instrument, so far as I am able to learn, has always been by preference with the smooth (proximal) side of the blade applied to the tonsil. Mackenzie[1] made his modification with its detachable and reversible handle that this might be done more readily (see above). Its method of use was, that it was inserted into the mouth in an anteroposterior direction and the aperture put over that part of the tonsil which protruded beyond its surroundings into the cavity of the throat. The blade was then pushed across, cutting off that portion.

With my method one must approach the tonsil at an angle, approximately 45°, which requires the shaft of the instrument to cross the mouth entirely from the opposite side. This necessitates the distal side of the shaft being applied to the tonsil. It at the same time has the great advantage of leaving the lateral portion of field of operation wide open for view and the use of the fingers of the other hand. Having the blade ground far back widens it further. (The use of the proximal side will be found exceedingly awkward or even impossible as the surgeon's hands are interfered with and the lateral portion of the field of operation covered from view.)

It is a very great advantage to operate on the right tonsil by holding the guillotine in the right hand and on the left tonsil by holding it in the left hand. If the surgeon can use only one hand, the position of the patient should be recumbent. Assuming that he uses his right hand for both tonsils and stands on the patient's right: for the right one he faces the patient's head; but for the left one he must turn around so that he faces the patient's feet, and stand somewhat beyond (above) his head. (These relations might be sustained in the erect posture also.) The head should be held firmly by an assistant to prevent rotation, and the mouth kept fully open by a gag.

Regardless of what may be the position of the patient's head, the surgeon takes his bearings from the lower jaw. The guillotine, with the transverse axis of the aperture vertical, is introduced into the mouth at an angle of 45° outward and backward, passing back until the distal arc of the aperture is completely behind the tonsil. The direction of the shaft is then changed to point downward in order to get the ring of the aperture under the lowermost part of the tonsil. The instrument at this moment may sometimes to advantage be rotated slightly by turning the handle downward (toward the feet). This tends to enlarge the field of vision. It is then pressed outward until the distal arc of the aperture has been pressed against the ramus of the jaw, or, in case the patient is not anesthetized, against the firmly contracted internal pterygoid muscle which is inserted here. It is now brought slightly forward and upward, but held firmly against the bone and muscle, when it will be seen that the lower distal arc of the aperture has acted very much like a scoop, having secured the lower part of the tonsil and brought it forward and upward into the neighborhood of the alveolar eminence. In case the shaft has been rotated to secure its lower part, it is now put back into its original position by turning the handle upward. The upper portion of the tonsil is usually put into the grasp of the distal arc of the aperture by this rotation. If the tonsil is not too large and flat (thin) it is usually secured, both lower and upper portions, in the first setting of the guillotine and no rotation is needed. The distal arc of the aperture is now firmly held behind the posterior border of the tonsil and the instrument drawn forward and upward at an angle approximately 45°, which will be found to have pulled it upward and forward onto the eminence of the alveolus. The blade is now pushed down with the gentlest possible pressure until the surgeon sees that it is in contact with the tissues. It should not be pressed forcibly until the parts are engaged satisfactorily in the aperture. The blade, being in contact with the tissues, prevents the portion of tonsil which has gone through from slipping out again.

At this moment the surgeon may perceive that although the distal arc of the aperture is entirely behind and external to the tonsil, a part of its anterior portion has still not gone through. This is usually readily seen, but may be more definitely determined by feeling with the tip of the index-finger of the other hand; and at the same time it may be pushed through. This is done by the gentlest massage—simply stroking it in the direction of the aperture with the ball of the index-finger and, at the same time, pushing the blade very gently across the remaining portion of the aperture. When the last of the anterior portion has gone through it may be readily seen as a rule; but may be determined with great accuracy by feeling with the ball of the index-finger—passing it up and down over the end of the blade as it closes the aperture. If all of the tonsil has gone through, the distal arc will be felt smooth and firm and to be covered by what seems to be a thick mucous membrane. (It is of course two layers of membrane.) If a part of the tonsil has not gone through, it can easily be felt and recognized as a mass of tissue harder than membrane and usually irregular.

All of the tonsil having gone through, the blade is now pushed across with all the power of the surgeon's hands. Great pressure is usually required because the blade has been made dull. If it be too dull or if it does not fit perfectly into the soft metal lining of the distal arc of the aperture, it will not cut altogether through. The instrument must then be pulled forward a little and its end be stripped off with the finger of the other hand. This does not delay the operation. It may possibly make a little more subsequent pain; but I am by no means sure that it does.

On examination of the extirpated tonsil while it is still held in the grasp of the instrument—that is, just as it comes from the patient's mouth—it will be seen

that its surface which was exposed in the throat has the appearance of having been turned inside out (Fig. 4,I). On loosening it from the instrument it is seen that its capsule side—its lateral surface—bears further proof of this fact. The capsule appears completely invaginated (Fig. 4, II); but it can be readily replaced—that is, turned over into its original relations, thereby restoring the tonsil to its customary appearance, as it is in the throat (Fig. 4, III), covered on its lateral, convex aspect by the capsule (Fig. 4, IV). This phenomenon is readily explicable when one remembers that it was brought up on to the eminence to have the ring of the guillotine, as it were, stuffed down over it, converting its convex bed into a concave one at the time of cutting. Further examination of the specimen reveals that a little of the free edge of the anterior pillar, including a few fibers of the palatoglossus muscle, is attached to it. I always remove this bit of the anterior pillar with the tonsil because it leaves a more open wound and a more open fossa when healed. There seems to be no surgical reason against it; on the contrary, it makes the tension of the scar begin at a point anterior to and below what would otherwise be the case, which tends to draw the palate forward and downward. In cases in which the tonsil is to be removed because of Eustachian tube irritation this seems to me to be advantageous. In operating under general anesthesia I prefer to have the pharyngeal reflex present. I much prefer to have the aperture fit rather snugly over the tonsil.

This method will be found to be satisfactory under all usual conditions, provided the variations in the jaws of different ages are borne in mind. For the young jaw the angle of the instrument must sometimes be increased to even more than 60° outward and backward and to even more than 60° downward and outward. It does not require grasping the tonsil in a vulsellum and pulling it out. The imbedded tonsil is usually removed as easily and as quickly as the protruding one (see above). No loosening of the pillars is required, because I prefer to take a little of the anterior one. Familiarity with the method will enable the surgeon to remove a tonsil in its capsule complete in from five to eight seconds. I think that the shock from this method is less than from the longer operations.

Stumps of tonsils left from previous operations are usually as easily removed as the original tonsils.

3542 Washington Avenue.

Intestinal Sutures.—The evolution of the intestinal suture has brought us to the point where we are certain of good results when the sutures are properly applied and are of the right material. Non-absorbable suture material should be cast off into the lumen of the intestine after serving its period of usefulness. This is best accomplished when used for the inner layer. There is also less destruction of tissue. When placed externally it promotes unnecessary adhesions, plastic exudate and fibrous bands, and may interfere with the proper bowel function because of its prolonged irritation. Absorbable suture material used for the outer layer is soon taken care of, and does not cripple the action of the intestine. The suture in intestinal work must control hemorrhage, secure proper coaptation of the tissues, prevent leakage, avoid pursing, be quickly introduced and must not strangulate the tissue. The back lockstitch of Pagenstecher's thread serves all these purposes. Experimental work has demonstrated that chromic catgut when employed as the outer suture lasts sufficiently long for positive and firm union to occur.—A. E. Benjamin, in the *Lancet-Clinic*

LIPOMATOSIS OF THE LOWER EXTREMITIES WITH REPORT OF A CASE

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AND
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This case of lipomatosis of the lower extremities is reported on account of its rarity. Its steady progression suggested a malignant process. No literature is found bearing on this subject.

Patient.—R. R., a girl aged 10, was seen in consultation with Dr. B. L. Dwinell of Taunton, Mass., Dec. 8, 1907. She had suffered since birth with slowly progressing deformity of feet. The family history was negative. "Both feet at birth were shaped like animals' feet, and much larger than normal in proportion to the body; weight at birth, 4½ pounds. Patient had on left side a peculiar mark which looked like an old burn: otherwise had been normal and healthy. The patient's mother was not as well as usual when carrying the child, and had a great deal of pain at night. At the age of 6 months, the child's toes were amputated. At this age the feet were noted to be growing faster than the rest of the body. At the age of 10, patient weighed 70 pounds. From this time on the left leg, especially, grew very fast. The mental development of the child had been excellent. She walked and ran like the other children, but tired very easily. Feet sounded not unlike elephant's feet when walking." Double amputation had been advised.

Fig. 1.—Lipomatosis of feet and legs; front view.

Examination.—General condition fair. Patient was thin and had a peaked expression; seemed active and well; pulse slightly rapid at the time of examination. Running down the left arm and leg was a crusty, eczematous lesion, not progressive. The left foot was larger than the right, but both feet were markedly enlarged and lobular in character, the swelling involving the whole of both feet. The same lobulation extended up to the

knee, but was there less marked than in the feet. Masses the size of two fists stood out on the left calf. These were not adherent, and could be easily picked up. There was a pad of fat about 4 inches thick on the left foot. The dorsum of the foot was probably five or six times the normal in circumference. Examination of heart, lungs, and abdomen were negative. Urinalysis was negative.

The patient had not been seen for about two months prior to this date, Feb. 16, 1908, during which time the legs rapidly

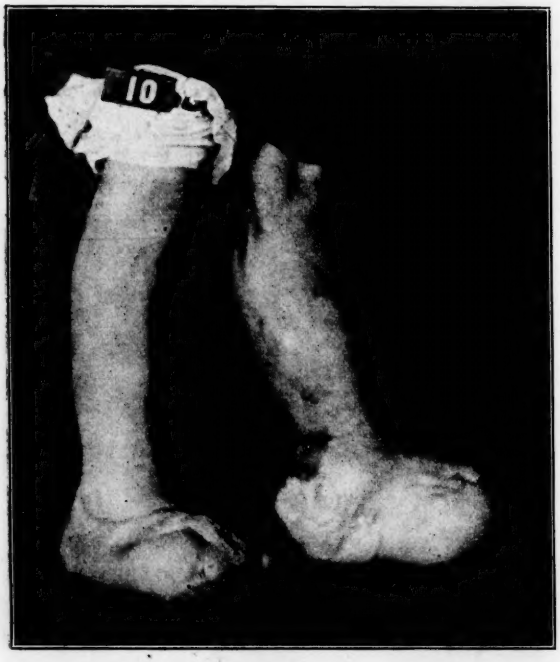

Fig. 2.—Lipomatosis of feet and legs; lateral view.

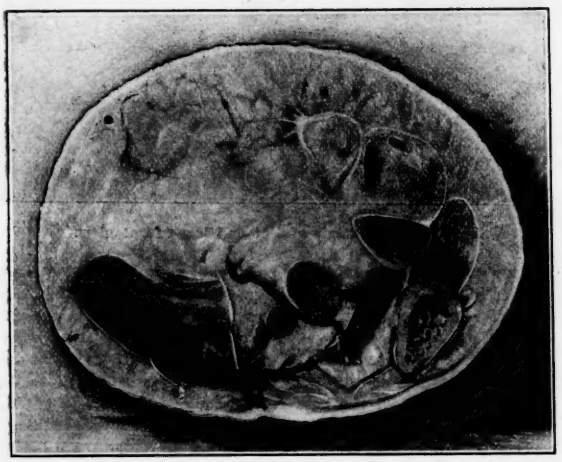

Fig. 3.—Cross-section of amputated left foot.

increased in size. A consultation was held with Dr. E. G. Brackett, and we advised conservative operative treatment before amputation was done.

Feb. 29, 1908: Radiograph of left foot, and also photographs were taken (Figs. 1 and 2).

Operations.—March 30, 1908, ether was given and operation performed. An incision running from the tibial tubercle on the outer side of the left leg was made down to the ankle-joint. Masses of fat, encapsulated and running between and into the muscles, were dissected out. Some were easily taken out by blunt dissection, while others seemed a part of the muscle substance. The muscle was pale and there was considerable fatty tissue between the fibers. The operation lasted three hours. The wound was closed with silkworm gut and a slight drain left. Recovery from the ether was poor. Patient had an elevation of temperature for three days, and then became normal. There was considerable shock. The convalescence was otherwise uneventful.

April 20, 1908: Under ether a similar operation was done on the right leg. As much of the fatty tissue as possible was dissected out. The wound was drained. There was some sloughing of the skin flaps. Convalescence was otherwise uneventful.

May 17, 1908: Results from previous operations were good; still there was a large amount of fat on the feet; patient was gaining in weight.

Oct. 11, 1908: A second operation was done on the right foot. A large amount of fat was dissected from plantar surface of the foot. Patient made a very poor recovery from the ether. On the second day she had a pulse of 160 and temperature of 103 F., but under treatment recovered.

The skin flaps in these operations even under hot towels grew cold. Sloughing of the flaps occurred after each operation. Following each of these three operations the patient suffered shock, although the last operation lasted only about

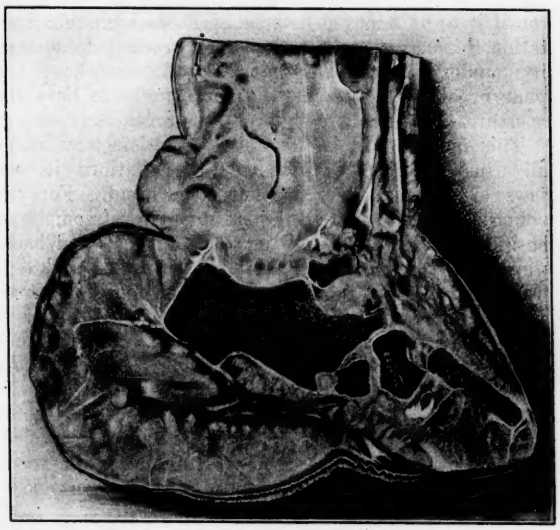

Fig. 4.—Longitudinal section of amputated left foot and leg. Note the lobular fatty deposits and fatty infiltration and degeneration of muscular tissue.

one and one-fourth hours. The patient's general condition seemed poorer each time, and there was a very marked increase in weight throughout the whole body, but especially in the abdomen.

The patient now weighed 137 pounds at the age of 12. It seemed as though she would not be able to withstand more operations. The confinement to the house told on her general condition. The right leg, while not normal, was about one-half the size that it was previous to the operations. The left leg, not having been controlled by operation, had continued to grow. Amputation of the left leg was therefore advised. Dr Dwinell of Taunton was seen in consultation.

March, 1910, under ether, a regular amputation of the left leg was done at the point of election; silkworm gut sutures were used. There was a good recovery from the ether.

The general condition of patient has been materially better since this operation. She now walks about well with crutches, while awaiting an artificial limb. The right foot has ceased to grow.

Vertical and cross sections of the amputated foot, natural size, are shown in Figures 3 and 4.

411 Marlborough Street.

ANGIOSARCOMA OF THE LIVER IN AN INFANT

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NEW YORK

CASE.—Baby N., born April 10, 1910; male, second child.

Family History.—The history of the father and mother, as well as that of the grandparents on either side, showed absolutely no record of malignant growths. The mother's age was 28; that of the father 32.

Past History.—The child was delivered instrumentally, due to *inertia uteri*. It had no deformities and seemed to grow normally until the third week.

Present History.—Three weeks after the birth of the child, while the mother was bathing it, she noticed that the child's abdomen was somewhat protuberant. One week later the child was brought to me for this reason alone. No other symptoms of disease had been noticed; the local condition was evidently as yet causing the child no inconvenience. The stools were normal and digestion good. The child was breast-fed.

Examination.—The child was somewhat pale and languid. The head and neck were normal; there was no glandular enlargement. The apex of the heart was in the fourth intercostal space, in the nipple line; no murmurs were heard. Lungs were normal. No deformities of either extremities.

The abdomen was markedly protuberant, especially in the upper right hand quadrant, and dilated veins were perceptible over the liver region. The circumference of the abdomen was

Enlargement of abdomen from anglo-sarcoma of liver in an infant aged 3½ months.

eighteen inches at a point one and a half inches below the costal border. Percussion gave a flat sound over the upper three-quarters of the abdomen. On palpation, an indistinct mass was felt filling both sides of the upper abdomen. The surface of the mass was smooth and the edge was distinctly palpable below the umbilicus. This mass could not be definitely connected with any organ.

Exploratory Operation and Findings.—The case was referred to Dr. Henry Roth, attending surgeon to Lebanon Hospital, and he performed an exploratory laparotomy over the mass in the median line, which showed the tumor to be an enormously enlarged liver, filling three-quarters of the abdominal cavity. The liver was dark brown in color and mottled with small blue areas averaging one centimeter in diameter. Its surface was smooth. The spleen and kidneys were not enlarged, nor was there any apparent invasion of any other abdominal organ.

A small section of the liver was removed from the upper surface for microscopical examination and the abdomen closed. The child made an uneventful recovery from the operation. Following the operation, the child's girth progressively increased, until, just before its death, at the age of 3½ months, it measured twenty-nine inches at the umbilicus.

The extremities became edematous, but at no time was there ascites or jaundice. Diarrhea finally set in and the child died of exhaustion. No autopsy was permitted, although strenuous efforts were made to obtain it.

The section of liver removed at the time of operation was sent to Dr. Eugene P. Bernstein, pathologist to Lebanon Hospital, who reported it to be angiosarcoma.

This case is reported because of its extreme rarity and the difficulty of making an accurate diagnosis. On reviewing the literature, I find that Arnold[1] reports two cases. The first of these was in a boy of 15 years, and the second in a man of 53 years. Both died in a short space of time, and the diagnosis was apparently made at autopsy. Arnold, after reviewing several cases of malignant disease of the liver, comes to the conclusion that several of these cases strongly resemble angiosarcoma of the liver. Dervaux[2] reports a case of angiosarcoma of the liver, secondary to sarcoma of the testis.

The chief features in my case are, first, the early period of life at which the tumor started (possibly during gestation); second, the rapid increase in abdominal girth; third, the early death of the infant; and last, the paucity of symptoms noticeable until just before death.

1266 Boston Road.

A SIMPLE APPARATUS FOR PROCTOCLYSIS

PERCIVAL NICHOLSON, M.D.
ARDMORE, PA.

Not knowing whether any one has been using a similar apparatus, but not having seen anything like it mentioned in the medical journals, I wish to describe a simple apparatus which I put into use in the Presbyterian Hospital in Philadelphia in 1910, which fulfils all the requirements for carrying out the drop method of proctoclysis.[3]

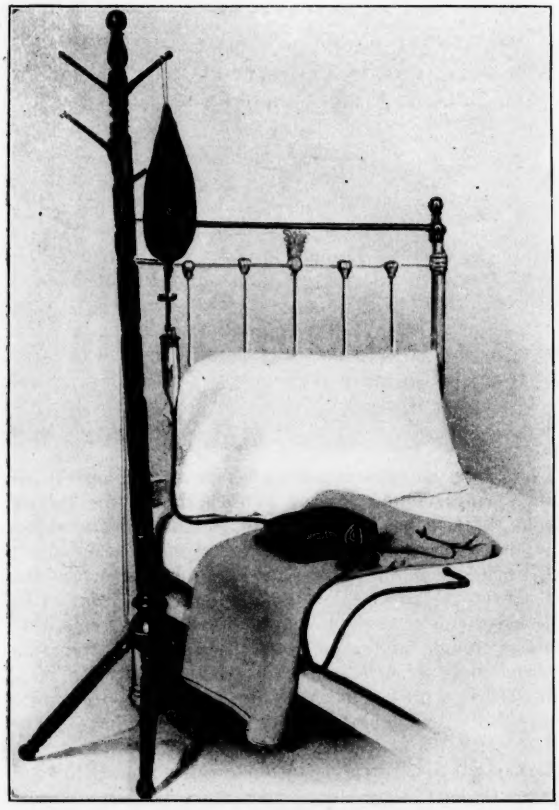
It is simplicity itself, the requisites being a glass cylinder of 4 oz. capacity, drawn out at the end to carry rubber tubing; a No. 7 rubber stopper with a hole in the middle to carry a pipette, and another hole in the side for an air vent; a Moore pinch-cock, and a proctoclysis nozzle.

To apply the apparatus simply take an ordinary fountain syringe, found in any household, cut the tubing about three inches below the bag, put the pinch-cock on the short tube thus formed and shut it off tight about 1½ inches from the bag. Now run the short end of the tube over the pipette, securing it with a ligature. To the lower end of the glass cylinder attach the remaining rubber tubing, and in place of the ordinary irrigation nozzle apply a hard rubber proctoclysis nozzle. Then fill the bag with normal salt solution and run the lower end of the tubing between two hot water bags. The illustration shows the entire apparatus assembled and the bag filled with salt solution (which is well to have warm, though that is not of great importance). A short distance from the nozzle the rubber tubing is carried between two hot water bags partially filled with water at about 150 to 175 F. Clinically it has been found that the salt solution, passing, as it does, a drop at a time between the two hot water bags, is thus heated to the proper temperature before entering the rectum. The temperature of the solution in the douche bag is not of much importance, as it will be cooled in dropping into the cylinder. Both hot water bags are surrounded by a blanket which acts both in retaining the heat and in protecting the patient's skin from burning.

1. Beitr. z. path. anat., 1890, viii, 123.
2. Journal de sc. méd. de Lille, 1902, xxv, 131.
3. Since the above was written there has appeared in Surgery, Gynecology and Obstetrics an article by Dr. W. A. Dewitt of Philadelphia describing the same apparatus, with a slight modification, leaving it to be inferred that it was original with him. Dr. W. A. Dewitt was a resident in the Presbyterian Hospital in Philadelphia at the time I introduced and first put in operation the apparatus described above, with the origination of which he had nothing whatever to do.

Having set up the apparatus, loosen the pinch-cock until the solution drops from the pipette at the rate desired; then introduce the nozzle just within the sphincter. It will be noticed that an important feature of this apparatus is that its operation is always capable of inspection.

Should the nozzle become blocked, a rise of fluid in the cylinder will be noticed, and by shutting the pinch-cock and removing the rubber tube from the lower end of the glass cylinder a small quantity of salt solution can be forced by means of any syringe through the lower tube and thus clear the opening in the nozzle without removing it from the rectum; then by reattaching the tube to the glass cylinder and opening pinch-cock the flow is reestablished.



Illustrating parts of proctoclysis apparatus assembled ready for use.

As only the contents of the small glass cylinder and the small column of water in the tube press on the bowel, the bag can be raised to almost any height desired without causing expulsion of fluid alongside the nozzle; but the best results are attained when a moderate elevation of from two to three feet is maintained.

This apparatus has been in use for over one year with marked success, and its simplicity admits of its use in general practice as well as in hospitals, as it is inexpensive, efficient and cleanly, all parts being capable of sterilization.

Attractive Diet in Neurasthenia.—In order that a diet may be available, it must be palatable, and especially is this the case in dealing with neurasthenics.—D. N. Paton in the *Practitioner.*

A NEW METHOD FOR APPLYING PLASTER JACKETS IN HYPEREXTENSION *

PERCY WILLARD ROBERTS, M.D.

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NEW YORK

There seems to be little diversity of opinion as to the theoretically simple mechanical problem involved in treatment of Pott's disease. The object is to support an upright column which has become weakened at one point and either bends or threatens to bend, and at the same time to abolish or minimize friction on the articular surfaces of the diseased vertebral body, thereby lessening the likelihood of deformity and giving Nature opportunity to limit the lesion and to effect a cure. In dealing with the flexible spine there is but one way to accomplish this, and that is by throwing the burden of weight-bearing on the articular processes—in other words, to put the spine in a position of hyperextension. This

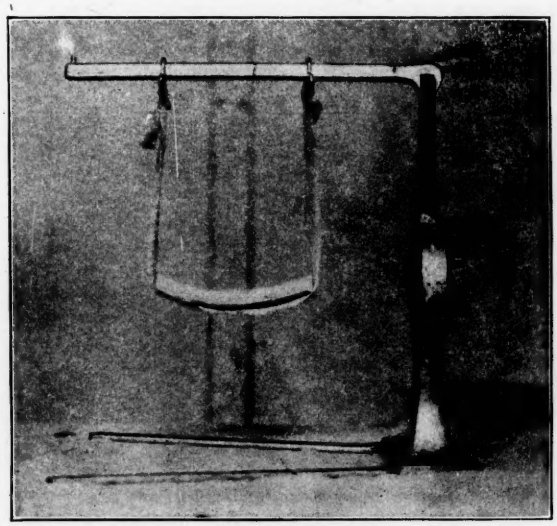

Fig. 1.—Roberts' jacket and sling.

would seem simple enough, and yet the study of a large number of hospital cases forces the conviction that it is seldom achieved by present methods. There are various roads to the end sought. One may choose the spinal brace, the gas-pipe frame or the plaster jacket, but it is the last of the three that will here be considered, for the jacket has many advantages in hospital and dispensary practice.

Except in certain localities, notably Boston and Baltimore, it is the custom to apply plaster by the Sayre suspension apparatus or some modification of it, and this of itself is eloquent testimony of the value of a method which has undergone so little change in nearly forty years. But no one ever asserted that the Sayre method produced hyperextension. It does not. It is, nevertheless, a simple and effective way of securing immobilization, and the results obtained by it have warranted its continued use over a long period of time. Realizing its one shortcoming, a number of men have produced devices for applying plaster-of-Paris jackets in hyperextension. These have been effective, but fail

* Read before the Orthopedic Section of the New York Academy of Medicine, Nov. 18, 1910.

either in the element of simplicity or in accuracy, or both, and consequently have not been widely accepted in routine work. To overcome such objections I have evolved an apparatus which utilizes the bandage sling in combination with an ordinary jack, the simplicity and efficiency of which are shown in the illustrations.

To determine just what is accomplished in the way of position by the use of the familiar head-sling, tracings have been made in about fifty cases with the patients prone on a hard table and strung up ready for a jacket. Most of these showed some correction of deformity, but only a little, as will be observed on referring to lines 1

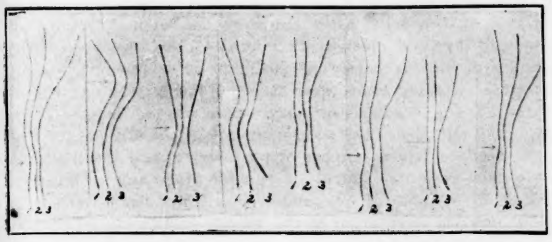

Fig. 2.—Tracings showing correction of deformity obtained by "jack and sling." 1, contour of spine with patient prone on a hard table; 2, contour of spine with patient in upright suspension; 3, contour of spine with patient suspended by "jack and sling."

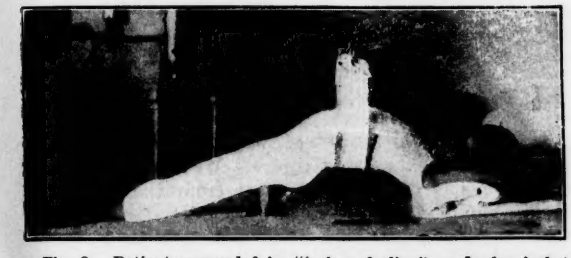

Fig. 3.—Patient suspended by "jack and sling" ready for jacket. Note extent and thickness of padding.

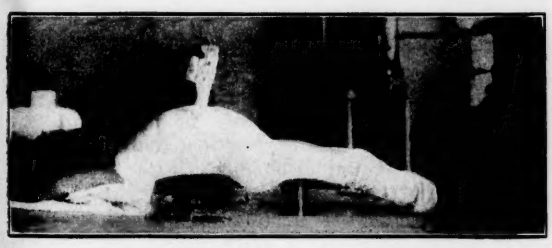

Fig. 4.—Jacket finished but not trimmed.

and 2 (Fig. 2) of the tracings presented herewith, which are typical of the entire number. In contrast with line 2, traced by a lead tape with the patient in upright suspension, is the third of each set, which gives the contour of the same spine suspended by the jack and sling.

The apparatus illustrated in Figure 1 consists of an automobile jack, to the movable upright of which is attached a horizontal bar, and to the base two foot-pieces to insure lateral stability. On the bar are two shaped wire loops, over which are pinned the ends of a muslin bandage. Its simplicity is evident.

It is used as follows: The patient lies on the back and a two-inch muslin bandage is passed under the body, bearing exactly on the kyphos; the bandage is padded generously the whole breadth of the body. This form of padding, which is a departure from ordinary practice, is absolutely essential to avoid excoriations. Felting at least one-quarter of an inch in thickness is the best material for the purpose. The ends of the bandage are pinned over loops on the horizontal bar and the jack is set in motion, a hip-rest and shoulder-rest being placed in position as the patient rises. The desired degree of hyperextension having been obtained, the usual pads to protect the spinous processes and iliac prominences are placed in position. The plaster bandage is started at the pelvis. When the suspending sling is reached, the bandage is crossed over the body from the lower border of one upright to the upper border of the other. To give strength to the front of the jacket several folds of plaster bandage are passed longitudinally between the muslin supports, being carried down on either side of the sling as it leaves the body. When the cast has hardened the sling is cut away close to the jacket. It is unnecessary to close the remaining slits except for appearance, as they in no way interfere with the strength of the jacket.

In simplicity, the jack and sling compares favorably with the usual method of upright suspension. By allowing the terminal parts of the spine to fall automatically and abruptly away from a narrow point of support it secures the greatest degree of hyperextension obtainable in any given case within the limits of safety. Further advantages over the upright method are greater steadiness of the patient, greater comfort of the patient, an easier attitude for the operator, less splashing of plaster, greater convenience in the application of jackets away from the plaster room—that is, in the home or hospital wards—the requirement of fewer assistants, and, of greater import than all the rest, the natural assumption of a better mechanical position for the diseased spine.

With this apparatus, I have applied jackets on patients ranging in age from 3 to 40 years, and in weight from 30 to 140 pounds, and all have been apparently comfortable. By the use of two slings, Calot jackets and jackets with jury-masts may be applied. While it is too early to report a convincing series of cases, there is reason to believe that persistent use of the jack and sling method, with frequent changing of jackets, will show a real correction of deformity in a large percentage of long-standing cases.

134 West Forty-Eighth Street.

PRIMARY SUTURE OF SUBPARIETAL RUPTURE OF KIDNEY

WITH REPORT OF CASE *

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OSHKOSH, WIS.

CASE OF SIMPLE SUBPARIETAL RUPTURE OF LEFT KIDNEY, LUMBAR INCISION AND SUTURE OF KIDNEY FORTY-TWO HOURS AFTER ACCIDENT, RECOVERY

History.—M. M., a schoolboy, aged 11, about 8:30 a. m., Oct. 26, 1910, in attempting to alight from a moving bicycle, slipped and fell, striking his right lumbar region against the edge of the street curbing. There was very severe pain in the right loin, but no collapse, shock, or vomiting; but for a period of about five minutes he was unable to walk because of general weakness, with dizziness and nausea. After a short rest, in a sitting, doubled-over posture, he was able to walk a distance of about half a mile to his home, and as he still complained of very severe pain he was put to bed.

* Read at the meeting of the Western Surgical Association, December, 1910.

Dr. F. W. A. Brown was called and examined the boy very carefully. There was no fractured rib or evidence of serious injury, the tenderness and rigidity in the lumbar region being the only apparent result of the tumble the boy had taken. The severe pain persisted until about 1:30 p. m., when about 8 ounces of bloody urine were passed, after which the pain was markedly lessened; half an hour later vomiting occurred, after which there was a still greater sense of relief.

Examination.—About 2:30 p. m. I saw the patient in consultation with Dr. Brown, at which time the boy did not complain of much pain, other than a severe and constant ache in the left lumbar region. One was impressed at once, by the "bad appearance" of the patient. The skin was sallow or yellowish and the face had a drawn, anxious expression, despite the fact that the boy was making light of his injury and was asking for some chewing-gum. Pulse, temperature and respirations were normal; there was no dyspnea but deep inspiration caused pain under the left lower ribs. Abdominal palpation revealed marked rigidity and tenderness in the region of the kidney, more marked posteriorly. Deep palpation was impossible, and a tumor mass could not be made out, either by palpation or percussion. There was no free fluid demonstrable in the peritoneal cavity, nor was there any external evidence of the injury.

Diagnosis.—Because of the nature of the trauma, hematuria and rigidity of muscles in the region of the kidney, rupture of that organ was diagnosed, and exploratory incision advised. This advice was refused.

Illustrating the author's case of a stellate, traumatic rupture of the kidney, extending into the pelvis, in a boy aged 11.

Course of Injury.—During the following afternoon and evening the boy was better, in that the pain was not so severe, but he was unable to rest because of the constant dull ache at the site of the injury, and the passage of bloody urine about every hour. The act of micturition was without pain or tenesmus. The next morning there was an attack of vomiting, the bloody urination continued, and the patient became drowsy and weaker. The parents then became alarmed, realized the seriousness of the boy's condition, and sent him to the hospital for operation. On admission the patient was very weak, unable to sit up, the face was drawn and pinched, and there was a distinct yellowish tinge to the skin. His only complaint was a dull ache in the lumbar region, with a more severe pain on moving. Examination revealed a distinct fulness in the left iliocostal space, with marked tenderness on pressure; there was rigidity of the lumbar and abdominal muscles, and on bimanual palpation a mass could be detected, which was dull on percussion, but there was no free fluid in the peritoneal cavity. The temperature was subnormal, pulse 130, small and collapsible, and the respirations 24 and superficial.

Operation.—This was performed at St. Mary's Hospital, Oct. 27, 1910, at 2 p. m. Ether anesthesia administered by Dr. W. P. Wheeler, and Dr. F. W. A. Brown assisting, the kidney was approached through the usual lumbar incision. Division of the transversalis fascia revealed the fatty capsule of the kidney, through which blood was apparent, similar to the appearance of the peritoneum in cases of intra-abdominal hemorrhage. Division of this capsule was followed by the escape of considerable blood and many clots. The kidney was promptly delivered through the wound, and examination revealed a stellate tear extending into the pelvis of the organ in the upper pole of the kidney as shown in the illustration. A transverse tear was situated at about the junction of the upper and middle thirds, extending from side to side, practically separating the upper pole from the remainder of the organ. This upper fragment was divided into two unequal parts by a longitudinal tear extending from the transverse rupture to the upper extremity of the organ. This longitudinal tear was not located in the mid-line of the convex surface, but was situated about a quarter of an inch behind the mid-line at its lower part, and about half an inch behind, at its upper extremity, on a line probably analogous to the avascular line of Broedel. After cleansing the wound margins of blood-clot by salt sponges that passed into the pelvis, the wounds of the kidney were sutured with chromic catgut mattress stitches, which were inserted deeply into the parenchyma of the organ. Ordinary round curved needles were employed, and there was no tearing out of the stitches. After these deep mattress stitches were inserted and tied loosely, there was absolute control of the bleeding, and a layer of superficial circular or over-and-over stitches were inserted to effect accurate coaptation of the wound edges. An effort was made to close the fibrous capsule but this was found to be impossible. A cigarette drain was inserted to the lower pole of the kidney and the lumbar wound closed except at the passage of the drain.

Outcome.—Recovery was uneventful; there was very little discharge from the wound, no urine; and the drain was removed October 30. The patient was discharged with the wound healed, a perfect recovery, November 13.

REVIEW OF SUBJECT

That subparietal rupture of the kidney is not common is shown by the fact that in 1903 Watson[1] was able to collect reports of only 660 cases from the literature. Neilson[2] in 1908 added reports of thirty-four cases in which operation had been done, making a total of 694. In the same year Lardennais[3] collected reports of 771 cases (this, an inaugural thesis, has not been available in the original).

Since Neilson's report in 1908, I have been able to find either mere mention, or a more or less complete report, of 147 additional cases, in seventy-nine of which operation was not done and in sixty-eight operation was done. This rapid recent increase in the number of reported cases would tend to show that the above figures fall far short of the actual number of cases.[4]

1. Watson: Boston Med. and Surg. Jour., 1903, cxlix, 29.
2. Neilson: Am. Jour. Med. Sc., 1908, cxxxv, 54.
3. Lardennais: Thèse de Paris, March, 1908; Zentralbl. f. Chir., 1908, No. 45, p. 1328; Jour. de Chir., May, 1908.
4. The collected cases are set out below.

Operations:

Tilton (1 case): Ann. Surg., 1909, l, 812.
Nassau (1 case): Ann. Surg., 1907, xlv, 792.
Eisendrath and Herzog (1 case): Ann. Surg., 1908, xlviii, 709.
Bauman and Lower (1 case): THE JOURNAL A. M. A., May 1, 1909, lii, 1401.
Fredet (1 case): Rev. de gynéc. et de chir. abd., 1909, No. 2, Surg., Gynec. and Obst., 1909, ix, 696.
Bugbee (1 case): Med. Rec., Nov. 5, 1910.
Connell (1 case): Report herewith.
Griffith (2 cases): Brit. Med. Jour., April 25, 1908, p. 979.
Kaarsberger, H. (2 cases): Ugesk. f. Laeger, 1909, lxxi, 557. Abstracted in THE JOURNAL A. M. A., Aug. 21, 1909, p. 663.
Fischer (2 cases): Zentralbl. f. Chir., 1909, No. 33, p. 1156.
Martin (2 cases): Old Dom. Jour. Med. and Chir., 1910, x.
Rossi (3 cases): Zentralbl. f. Chir., 1908, No. 16, p. 510.
Ponomarew (3 cases): Zentralbl. f. Chir., 1909, No. 13, p. 477.
Gibson: In a personal communication reports four cases.
Yoshikawa (5 cases): Zentralbl. f. Chir., 1909, No. 18, p. 655.
Frank (5 cases): Arch. f. klin. Chir., 1907, No. 2; Year Book of Surg. (Murphy), 1908, p. 535.
Brewer (6 cases): Am. Jour. Med. Sc., May, 1908, cxxxv, 635.
Johnson (7 cases): Ann. Surg., 1909, l, 715.
Tromifow (20 cases from the Russian literature): Zentralbl. f. Chir., 1908, No. 10, p. 312.

The non-operative cases were reported by Frank, 34; Ponomarew, 29; Trofimow, 13; and Rossi, 3.

The kidney seems to be as well protected from injury as other of the abdominal viscera, if not better, yet the kidneys are the most frequently injured in case of abdominal contusion. The fact that there are two kidneys, one on each side, of course, accounts in a large measure for this frequency.

ETIOLOGY

The theory as to the cause that may explain a majority of the cases is that of Küster, in which the rupture is supposed to be due to hydraulic pressure acting through the full vessels and the pelvis and causing the organ to burst along lines radiating from the hilum toward the point of maximum impact against the lower ribs, the opposing resistance being supplied by the vertebral column.

Abdominal contusion most liable to cause damage to viscera, is that in which there is a sudden, strong impact against the anterior or lateral abdominal wall, often when the patient is taken unawares, and the abdominal muscles do not have time to contract in self-defense; such contusions are inflicted by a fall against a sharp object or blows from a hoof, a fist, a thrown ball, a carriage-pole, or a piece of wood from a circular saw. A simple fall on the feet, or muscular action alone, may produce rupture of the kidney; a dozen of the latter variety of cases are on record.

Another type of injury, such as being run over by a wheel, or crushed between car-bumpers, more often results in a complicated rupture. There is usually very little or no external evidence of injury in the former class of cases.

CLASSIFICATION

Ruptures of the kidney must be divided into complicated and simple. In the former there are additional injuries to other organs or structure; in the latter the kidney is the only organ damaged. A classification has been based on the extent of the damage to the kidney, but this is of very little clinical or practical value.

Simple rupture of the kidney is much more common than are the complicated injuries. In Watson's and Neilson's cases 512 were simple, and 125 complicated. This approximate proportion is maintained in the report of Frank, in which there were thirty simple and nine complicated.

SYMPTOMATOLOGY

A most important element in the recognition of these cases is attention to the history of the accident and the nature of the traumatism.

Shock and collapse are often absent or but transitory, and the lack of recognition of this fact has been the cause of mistaken diagnoses and delay in proper treatment in a great many cases.

Pain is usually very severe at the time of the injury. It may be diffused or localized in the kidney region. Its duration varies greatly, but it is usually present and is followed by tenderness and a dull ache in the region of the ruptured organ.

Rigidity of the muscles over the kidney, with tenderness on palpation, is practically constant, and is of great importance.

Hematuria is generally present; it may be delayed in onset, or may occur with the first urination. In cases in which the ureter is blocked with a blood-clot, with a transverse tear of the pelvis or ureter, or with complete pulpification of the organ, hematuria may be absent. It must be remembered that hematuria following trauma in the region of the kidney is not pathognomonic of injury to that organ, as the bleeding may originate in the bladder or urethra, or there may be a hemorrhagic nephritis, or idiopathic or other types of bleeding from the kidney.

Tumor in the kidney region, may be absent, may develop within a short time, when it is usually due to a perirenal hematoma, or it may be of late development. In such cases it is probably caused by infection, or more rarely, secondary hemorrhage.

DIAGNOSIS

The diagnosis of kidney lesion demanding an exploratory incision, may generally be based on a history of a particular abdominal contusion, with rigidity, tenderness or tumor and hematuria.

TREATMENT

Treatment may be expectant or operative. A most important feature of the treatment, and of great influence on the result, is a recognition of the indications for treatment, and the selection of the proper line of treatment for the individual case. The results are important from this point of view, and Watson's series shows, that with expectant treatment 27 per cent. of the simple ruptures resulted fatally; and in the complicated injuries that the death-rate was 91 per cent. Radical operative treatment, i. e., nephrectomy, resulted as follows in Watson's and Neilson's series:

Complicated, 51 with 21 deaths (41 per cent.).
Simple, 132 with 30 deaths (22.5 per cent.).

Conservative operative treatment, *i. e.*, gauze packing, drainage or suture, had the following results:

Complicated, 18 with 7 deaths (38 per cent.).
Simple, 107 with 9 deaths (8.5 per cent.).

Of the 125 cases in which conservative treatment was employed, gauze pack or drainage was done 115 times, with sixteen deaths; suture of the renal wound or wounds was done ten times, with no fatality.

The decision between expectant and operative treatment is a momentous one, as the fate of the patient often rests on this decision. Concerning the former Neilson says:

So-called expectant treatment is permissible only in cases in which the local symptoms are insignificant, constitutional symptoms absent, and slight hematuria alone directs attention to the probability of renal injury.

Yet there are many severely damaged kidneys which if left alone, will cause death or prolonged illness, and in which the local symptoms are insignificant, the constitutional symptoms absent, and with but slight hematuria. There may be no differential sign or symptom between slight injury and complete rupture; therefore it would seem advisable to expose the kidney and arrive at a positive determination as to the extent of the injury in every case in which we can arrive at a probable diagnosis of injury of the kidney, and not guess at the seriousness or the triviality of the injury. By so doing a certain number of unnecessary exposures of the kidney will be made, but, on the other hand, a certain number of deaths will be prevented, and many prolonged illnesses and unsatisfactory results will be substituted by prompt and satisfactory recovery. As it is, in certain cases,

impossible to separate the slight from the extensive injury it behooves one to treat all cases as though they were serious until they have been proved to be otherwise.

All operations for rupture must be exploratory at the onset, and may then be either radical or conservative. Nephrectomy has, in the past, been employed quite extensively; but, from a theoretical point of view, from the experiments of Dolgoff,[5] who found that severe laceration, even tearing the organ in halves, in dogs, did not result fatally; and from the clinical evidence, in the frequent, satisfactory recovery after conservative measures, it would seem that packing, draining or suture might be more frequently substituted for nephrectomy. Gauze packing or drainage is the most common method of conserving damaged kidney, being employed 115 times in 125 cases in which conservation was attempted. Primary suture has been performed on but few occasions, though it is the ideal method of dealing with such injuries. Watson was able to collect reports of eight cases, and Neilson added two that were treated in this manner. Since the report of the latter I have been able to find reports of three additional cases in the literature, which, with the case reported in this contribution, makes a total of fourteen. In these fourteen cases there was no death, and only two unsatisfactory results. In one (Delbet) a secondary nephrectomy was necessary, and in the second (Watson) a pseudo-hydronephrosis and fistula resulted.

In every case the sutures, when placed, caused satisfactory hemostasis. In one of Griffith's cases, that of a man aged 48, the mattress sutures pulled through the very friable organ, and the fibrofatty capsule was sutured enclosing the kidney as in a bag, with a satisfactory outcome. Dolgoff found that wounds of the kidney healed much more rapidly if the capsule was preserved, and especially if its cut edges were united. In my own case the capsule of the upper third of the organ could not be united, yet the result was entirely satisfactory. In this case the wound was closed with interrupted mattress stitches that passed deeply into the parenchyma, and the wound margins were then accurately coapted by over-and-over superficial stitches.

In Fredet's case the patient had a nephritis, and it was for this reason that nephrectomy was not done. As a consequence of the most encouraging result in this case Fredet, in his enthusiasm, says: "Nephrectomy is indicated as a late operation only where there is widespread infection."

REPORTS OF OTHER CASES

A synopsis of cases collected from the literature since Neilson's article is given below:

GRIFFITH: A man aged 22, while running, slipped and fell, striking the left side below the ribs against the sharp edge of a piece of coal. He was able to walk some distance and climb two ladders, felt generally bad, but had no particular pain in the side. Five minutes after the injury he urinated what seemed to be pure blood, after which he felt much worse and nearly fainted. On admission to hospital he complained of pain all over the abdomen but more especially in the left lumbar region. One and three quarter hours after admission, the kidney was delivered through an oblique lumbar incision and was found to be torn on its posterior aspect at about the middle, extending from the convex surface to the hilum. Suture of the wound with catgut was done, which controlled the hemorrhage; a gauze wick was inserted to the kidney and the lumbar wound closed. The patient was discharged, well, on the eighteenth day.

GRIFFITH: A man aged 48, was struck on the left loin by one end of a heavy timber. On admission to the hospital shortly after the injury the patient was in a kneeling posture, being unable to either sit or lie down because of the intense pain. The pulse was good, but there was vomiting of bile, tenderness and dulness in the region of the kidney, with hematuria. Exploration revealed the lower third of the kidney nearly detached, with a longitudinal tear extending along the mid-line of the convex surface of the upper portion. Mattress sutures were inserted to close the wounds, but many of them cut through the abnormally friable organ. The fibrofatty capsule was then sutured, enclosing the kidney as in a bag. The lumbar wound was closed with a tube drain reaching to the capsule. The patient was discharged, well, on the twenty-third day.

FREDET: A male was struck in the left flank by a heavy falling body; there was brief loss of consciousness, followed by severe pain in left side with a hematoma but no free fluid in the peritoneal cavity. Catheterization revealed hematuria. Exploration revealed lesions on the anterior and posterior surfaces of the kidney. Nephrectomy was thought to be indicated, but because of a nephritis, it was deemed safer to suture the tears in the organ. Recovery ensued.

CONCLUSIONS

1. Owing to the rapid recent increase in the number of reported cases, there is reason to believe that subparietal rupture of the kidney is more frequent than the literature would lead one to believe.

2. Shock, injury to other organs, and external evidence of trauma are frequently absent.

3. A history of an abdominal contusion, followed by rigidity and hematuria, is sufficient data to lead to an exposure of the organ.

4. Slight lesions, and complete rupture of the kidney, can not be differentiated by clinical signs or symptoms.

5. Proof that there is an absence of serious rupture is called for before instituting the so-called expectant treatment.

6. Nephrectomy should be reserved for very extensive disintegration of the organ.

7. Conservative treatment, preferably by suture, is indicated in the majority of cases.

123 Main Street.

5. Dolgoff: New York Med. Jour., 1900, lxxii, 871.

THE ADENOID AND TONSIL OPERATION*

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The general practitioner first comes in contact with the child, and on him must largely rest the responsibility of recognizing the symptoms of these conditions as they appear in extreme cases. He should, moreover, appreciate the fact that there are remote and often less-pronounced symptoms connected with the adenoid and tonsil question that are as much a menace to the health as the others. It is not difficult to decide that a child who presents very large tonsils and adenoids and who breathes with open mouth, vacant expression, etc., should have an operation that removes the mechanical obstruction to a normal breath-way. But there are many cases in which the mere mechanical obstruction is the least important of the considerations involved, and the decision must often be based on symptoms not directly connected with the nose and throat, and which we are coming to recognize more and more fully as proper subjects for the operation, involving as much for the

* Read at a meeting of the Southside Branch of the Chicago Medical Society, Dec. 13, 1910.

child's future as the other. In adults, too, we are now removing the tonsils frequently for far more important reasons than that they are large, and at times in cases in which, though very little tonsillar structure is visible on casual inspection, much is found to be imbedded in the tonsillar triangle.

I shall not attempt to speak extensively of the anatomic features of this subject. It must be recognized that tonsils when they are diseased form a culture medium for bacteria, and the pathogenic germs often enter the system. Rheumatic fever, myocarditis, endocarditis, nephritis, arthritis and arthritis deformans, adenitis and other conditions and infections are thus traced to the tonsil as the primary focus in many cases. The cicatrized tonsil, the result of chronic inflammation, often giving rise to peritonsillar abscess, should be mentioned in this connection.

The faucial tonsils and the pharyngeal tonsil are a part of the so-called Waldeyer's ring, draining into the secondary lymphatic ring; the faucial tonsil drains into those glands situate at the angle of the jaw, in front of the sternocleidomastoid muscle, and the hyoid; the pharyngeal tonsil drains directly into the retropharyngeal glands. These connections will explain very definitely the close relationship and frequent involvement of these glands in diseases of the lymphoid structures. It should be a routine practice to examine the glands at the angle of the jaw and along the border of the sternocleidomastoid in every case brought to us for treatment of the tonsils. It is surprising in what a large number of cases the infection has traveled that far, with a resulting enlargement of the glands. The manifest treatment should then be directed, of course, not to the gland primarily, but to the infecting tonsil, and yet in many cases the latter have not been the subject of concern by patient or friends. In these cases until the tonsils are removed other treatment is practically useless.

The pharyngeal tonsil is a mass of lymphoid tissue lying in the vault of the nasopharynx, and its upper, posterior wall; a mass somewhat lobulated longitudinally with a marked median recess, when markedly enlarged, and extending laterally into the fossæ of Rosenmüller. In addition to this there is sometimes found a mass of lymphoid tissue called the tubal tonsil on the posterior upper lip of the Eustachian cushion, and very often bands of tissue extend from this across the fossa. Scattered masses of lymphoid tissue are often seen also over the pharyngeal wall, extending down over the oropharynx. This condition of the pharynx is often indicative of the presence of adenoids, especially if the faucial tonsils are also enlarged. In some extreme cases, I have found masses of the lymphoid tissue extending down from the Eustachian eminence over the upper surface of the veil of the palate for a considerable distance. In such cases, manifestly, the curette could not complete an operation.

Rarely is it possible to make a satisfactory examination of the child's nasopharynx with the rhinoscope mirror. Occasionally a child, tractable and unafraid, will allow the tongue to be depressed and the small mirror to be carried to the pharyngeal wall, when a complete view of the nasopharynx is sometimes possible. Ordinarily, however, palpation is necessary and will give the information needed.

I prefer to have the child held on the lap of the nurse, arms and feet confined by the nurse, the head of the child against the shoulder and steadied by an assistant standing behind. The examiner then seats himself in front of the child. A gag is inserted in the left side of the child's mouth and held by the examiner's right hand while the clean index-finger of the left, previously oiled, is carried up behind the palate into the vault.

The nasopharynx of very young children can be examined in this way, and one sometimes finds adenoids in children as young as three or six months which need an operation when interfering with the nourishment of the child.

Another method equally good is to have the child on the left side of the examiner sitting in the lap of the nurse, or in a chair; then the head, grasped with the open left hand, is held firmly against the left side of the examiner, the fingers are placed under the ramus of the jaw, the thumb pressed against the cheek, carrying it between the teeth, thus forcing open the mouth, and preventing the child from closing it on the examiner's fingers. The first finger of the right hand is then easily slipped behind the uvula and up into the nasopharynx. This can be done gently and quickly, but seldom without causing the child fright and some bleeding, as the lymphoid mass in young children is friable, soft, and easily injured. Cocainization of the nasopharynx is sometimes desirable, but usually unnecessary. In very young children it is better to use the little finger for palpation.

Hypertrophied faucial tonsils are easily recognized. Lying between the anterior pillar (the palatoglossus muscle) and the much thicker posterior pillar (the palatopharyngeus muscle) is the triangular tonsillar area. It is divided by the plica triangularis, a thin sheet of mucous membrane passing from the upper third of the anterior pillar downward and backward to the posterior pillar. This plica is the usual antero-inferior limitation of the lymphoid tissue of the tonsil and is adherent to the surface of the tonsil. In simple hypertrophy, in children especially, it is often fused in the tonsillar mass in which the enlarged tonsil occupies not only the space inclosed by the plica, and anterior and posterior pillar, but that below the plica—an inferior lobe—reaching at times the border of the base of the tongue. In projecting tonsils the enlargement may be inward, a large mass extending quite to the median line of either side, or the mass may be broadened from before backward and above downward but projecting very little.

Another variety, often encountered in practice, is the imbedded form. The tonsil is generally confined to the supratonsillar fossa, or it may include almost the entire triangular area. Such tonsils do not project into the throat on casual examination, but have enlarged outward, tonsils of considerable size being sometimes completely imbedded in the tissues of the lateral wall and soft palate. By palpation, a method that should always be employed, it is often found as a distinct mass as large as a filbert, or larger, entirely hidden in these tissues. Such tonsils can be recognized often by causing the patient to retch, when the muscular action projects them into the fauces. At other times a blunt hook can be used to pull forward and press outward the anterior pillar, when they are brought plainly into view. This is the variety that is frequently found in the toxic conditions spoken of, and when they are removed there may often be expressed from the crypts numerous masses of white, cheesy exudate.

These are the tonsils also overlooked by the practitioner until the infective results of their diseased condition have already been brought about. These are the

tonsils, too, on which so many inadequate operations are done, leaving much of the lymphoid masses still in the fossæ to continue their ravages on distant structures through systemic absorption. This may be partly explained by the fact that the tonsils are considered an operative field by the most inexperienced, and to this fact nothing has contributed more than that remarkably ingenious instrument, the tonsillotome, so easily manipulated that it appeals at once to every tyro.

The tonsillotome is not an instrument for every case, and indeed a very limited number only are suitable for its use. In the somewhat pedunculated tonsils, projecting into the fauces and easily engaged in the fenestrum of the instrument, a good operation can sometimes be done easily and swiftly. In other cases the instrument is an excellent one to cut off an enucleated tonsil which has been grasped and drawn inward by suitable vulsellum forceps. The ease of manipulation of the instrument and the idea once prevalent that a tonsillotomy was an all-sufficient operation in any case, has led to the universal use of the instrument. Our ideas, as specialists, have changed, and the instrument has been relegated to its proper position, for carefully selected cases only. It is not possible where the major portion of an imbedded tonsil lies submerged in the triangular fossa to do a proper enucleation with a tonsillotome alone, and to attempt to do it with this instrument is poor surgery, and not for the best interest of our patients. I condemn the practice because of these facts, and because it is possible to do an operation, in nearly every case, that is adequate and surgically right.

Let me preface my remarks on the method I follow with the statement that I have no particular instrumentarium to recommend for the use of others. Every operator has one to which he is accustomed. Every man should work with the tools he likes best, but I should insist that, if the operation is indicated, one should be satisfied with nothing less than the complete excision of the tonsil with its underlying capsule and the removal of every vestige of the adenoids in the nasopharynx, as far as possible. However, the matter of whether tonsillotomy is or is not advisable in some cases is one on which there has been, and is now, much debate, and one in which I should not care to be arbiter. It seems to me, however, that if the removal of the tonsils is indicated for any other reason than that they are a mechanical obstruction, the operation should include the crypts of the mass, which usually reach the underlying capsule, and therefore there should be a complete enucleation.

TECHNIC

The child should be in the hospital, if possible, the night before the operation, in order that it may become accustomed to the surroundings, and have the advantage of a night's rest.

I think it is not essential to precede the operation with any local treatments by antiseptics, although a mouth-wash and a nasal douche in the morning may be used.

Ether is the anesthetic for which no adequate substitute has been found. Since the investigation of Dr. Hinkle, given in a paper before the American Laryngological Association a few years ago, and of other writers, many specialists in this country have given up the use of chloroform and rely entirely on ether. I have used some of the shorter anesthesias, but have not been pleased with them, and prefer ether, as a rule. Nitrous oxid with oxygen is safe, and can be prolonged almost indefinitely, but, since administration is so much interfered with by the operation itself and the profuse bleeding, it cannot be satisfactorily administered continuously and in these cases the period of unconsciousness is of too short duration, while relaxation is not as complete as with ether. The final stages of the operation, therefore, are apt to be performed on a struggling, semiconscious child, even when employed for adenoids alone. The same may be said of ethyl chlorid and ethyl bromid, although the effects of these are rather more prolonged. The child should be quite profoundly anesthetized, so that the subsequent operation need not be too much delayed by further use of the anesthetic.

There is no better point than this at which to insist that an adequate tonsil operation is often by no means an easy task. It should be done under a general anesthetic, in children up to 15 years of age, certainly; and in certain circumstances in adults. In adults, however, I prefer local anesthesia—of which I shall speak presently—if the patient has a little courage and can control the reflexes of the tongue and pharynx sufficiently not to interfere with the necessary surgical manipulation.

For illumination I use the Jansen photophore (an electric head-lamp), and therefore prefer to operate in a darkened room. I have the child placed in a partially prone position on the operating table, the left arm drawn backward under the body, the right shoulder being pulled backward by the assistant, to whom is entrusted the holding of the gag, which is placed in the right side of the mouth. I prefer the Allingham gag. The child's face is brought to the edge of the table, and underneath the head a Kelly pad may be placed, all pillows being removed. The gag is very apt to slip out of position unless held firmly, and the assistant should be cautioned regarding it. In this position there is no danger of blood reaching the larynx and trachea, and there need be no change of position in removing both tonsils and adenoids.

It seems to me that one of the most important steps in the operation is the adequate enucleation of the tonsil. To accomplish this a sharp knife, bent on the flat, is placed behind the anterior pillar, cutting from above downward, through the mucous membrane reflected from the tonsil to the posterior surface of the pillar or severing adhesions when they exist. In children, always, and sometimes in adults, as a rule I cut through the plica triangularis, severing it from the attachment to the pillar. In adults it is sometimes possible to save this sheet of mucous membrane by passing the knife from above downward and backward between it and the tonsil, the under surface of which it covers. Then the velar lobe may be freed from its attachment to the posterior pillar in the upper angle, in the same way. The latter is not often necessary in a child. A hook knife may be necessary, too, for freeing the very upper angle, the tonsil being seized with a vulsellum forceps and drawn inward. This is seldom needed. After these attachments have been properly freed, a surgically clean finger is passed around the tonsillar mass, firmly, enucleating it still more from before backwards by lifting the mass with its underlying capsule from its bed on the superior constrictor muscle, as far as possible. Some force is sometimes needed in passing the finger between the anterior pillar and the tonsil and underneath the tonsil. I believe that this complete enucleation is a most important part of the operation, as was

well emphasized by Shurly in the last meeting of the A. M. A. at St: Louis.

The tonsil is then seized with an Ingals tonsil forceps and drawn inward with slight force. It is often seen almost completely everted. Over the handles of the forceps a wire loop is then carried, and over the head of the instrument to its base, and the loop is then tightened. Great care should be taken here not to include the uvula in the loop of the snare. I cut the tonsil off rapidly with this cold wire snare in children, as it is quite friable. In older children and adults the loop is closed slowly as it crushes through the tonsil. In adults it is so fibrous that the milled wheel of the snare will have to be used to sever it. Indeed, a larger wire than a No. 5 piano wire, which I ordinarily use, may be needed and a more powerful instrument than the one I generally employ (the Bosworth snare, modified).

The lower tonsil, the left, is removed first, then the right. The Rhodes punch forceps may be needed, if small masses of lymphoid tissue remain in the triangle, and these are easily recognized and can be carefully picked out. The space can be well exposed with a small, long-stem double tenaculum and thorough examination made.

Bleeding should always be controlled before the adenoids are removed. Usually pressure with small sponges attached to uterine hemostatic forceps is all that is necessary. I always have ready a pair of Jackson hemostatic forceps and a Mikulicz clamp. In some cases a ligature may be passed over the Jackson forceps and the bleeding vessel ligated. Seldom is this necessary.

In the removal of the adenoids I find the Lowenberg forceps the most satisfactory, as the finger of the left hand may be held in the nasopharynx and the tissue removed can be controlled absolutely. I usually reinforce this by passing a Gottstein curette to remove small vestiges of lymphoid tissue on the upper and posterior wall. I have at hand also Freer's pernasal forceps to remove small masses in the fossæ of Rosenmüller or other portions of the vault. Bleeding is of course very free at this time, but ceases in a very short time. Sometimes it may be necessary to carry a sponge into the vault with a finger of the left hand and use pressure for a brief time.

The child is then placed in bed for a few hours, a light diet is recommended for four days, and the patient kept in the house for a week. Twenty-four hours in the hospital is usually sufficient. A gargle of 1 per cent. solution of phenol may be used every hour for two or three days, and less frequently for a week. Iodole may be insufflated through the nose three or four times a day.

I have found the method described one that is adequate for every kind and size of tonsil, and is radical. I believe, too, that there is much less danger of hemorrhage in the snare operation, although bleeding sometimes takes place, whatever method is used, and one must always be prepared for such an emergency.

Local anesthesia may be used for adults, but one cannot promise absolute freedom from pain and discomfort, although I have sometimes removed the tonsils with scarcely any. If it were perfectly safe to use injections of cocain and adrenalin this would be quite ideal. I have used the method a good many times. Reports of cases of death following such injections were made at the last session of the American Medical Association at St. Louis, and I should hesitate to recommend it as a routine practice. On the other hand, the use of adrenalin (1/1000) swabbed over the surface of the tonsil and pillars, followed by the local application of a 10 per cent. solution of cocain freely, or the powdered crystals of cocain have had no fatalities so far as I know. When injections are made, a 1 or 2 per cent. solution of cocain is made, to a dram of which 5 to 10 minims of a 1/1000 solution of epinephrin, adrenalin or suprarenalin (fresh) may be added. The injection should be carried deeply into the base of the tonsils along the line of the anterior pillar, about ½ inch from the border of the pillar, using 10 to 15 minims of the solution for each tonsil. I now use local applications, usually of cocain crystals alone.

The instruments employed are a tonsil separator, curved tonsil knives, for each tonsil, a hook-shaped knife for the disengaging of the velar lobe, vulsellum forceps (Casselberry's), tongue depressor, sponges, etc. I favor seizing the tonsil with the vulsellum forceps first and then dissecting. A Freer right-angle knife is passed deeply into the tissues between the anterior pillar and the tonsil and brought down along the posterior edge of the upper posterior surface of the plica triangularis, saving this intact, which can be done in many instances. I believe, however, we will get better results usually if this plica is removed also. The same procedure is carried through with the separation of the posterior pillar and the tonsil, care being taken not to cut into either pillar. While the assistant depresses the tongue, traction is made on the partially separated tonsil and the hook-knife is carried over the top of the tonsil, almost at right-angles to it at first and separation of the tonsil from above downward, with the underlying portion of the capsule, is begun. As soon as the velar lobe is free, the remainder of the separation can be done with the Freer flat knives, care and discretion being used so as not to remove any of the underlying muscular tissue of the superior constrictor, on which the tonsil lies. The cutting should then be done downward and inward toward the fauces. The operation is often comparatively painless, with moderate hemorrhage. This same operation may be done equally satisfactorily under ether.

In this article I have given the details, as briefly as possible, of a method that has proved very satisfactory in a large number of cases. While the technic is rather difficult, at first, it can be acquired, and the results are usually so good that the painstaking care is justified. It enables one to deal with every form of tonsil, and leaves the throat in a surgically satisfactory condition.

Peoples Gas Building.

Elbow Sign of Scarlet Fever.—C. Pastia, in the *Tribune Médicale*, states that he found the characteristic sign he describes in 94 out of 100 scarlet fever patients in Grosovici's service at Bucharest and in all of twenty-three scarlet fever children examined in Paris. The sign is an exanthematous, linear, continuous eruption, localized in the bend of the elbow and very intense. At first the eruption is pink, then it turns a deep red or "dregs-of-wine" color or may resemble ecchymosis. The linear eruption is generally single but there may be several lines in some cases; between them the eruption resembles that of the ordinary scarlatinal exanthem. This linear exanthem develops early, he says, and persists to the end of the general eruption, leaving a pigmented line as it subsides. It is often useful for differentiation of the disease when the general exanthem is too faint to be positively recognized or is already past. He has never found it in any other eruptive diseases.

THE PRESERVATION OF ANATOMIC DISSECTIONS WITH PERMANENT COLOR OF MUSCLES, VESSELS AND ORGANS

A SUPPLEMENTARY NOTE

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This supplementary note is to record the changes and improvements in the method described in the preliminary note published in THE JOURNAL (Aug. 22, 1908, p. 642).

Certain subjects only will secure the color by the embalming solution and the method. They are cadavers whose muscles are of a dark color before being embalmed. This is determined before the embalming by making a long and deep incision (3 inches by 1) into the deltoid or the femoral vastus externus. If the muscles show a black cherry color, the preparations will present a satisfactory color. If the muscles show a deep red cherry color, they may make good preparations, but not so surely. If the muscles show a light red cherry the color of the muscles in the preparation will not be satisfactory and no ultimate treatment or procedure will improve it. The embalming solution and the method preserve the color that the muscles present in the subject, but will not give a dark color to muscles which present a light color in the subject before embalming. As a rule, negroes present blacker muscles than white subjects. It took a great deal of time and labor to find out these important facts.

I have finally reached the conclusion that the following steps are the best to produce satisfactory results. They are somewhat different from the ones described previously.

1. Use only lean male subjects. Fat, however small in quantity, makes bad preparations.

2. Embalm the subjects with the following formula:

A: Arsenious acid (saturated solution) 2.5 gallons; nitrate of potash, 1 pound; liquor formaldehydi 6 ounces. B: Alcohol, 16 ounces; liquefied phenol (carbolic acid), 6 ounces; glycerin, 16 ounces; creosote (beechwood), 2 ounces. The two solutions, *B* and *A*, must be mixed and strained. The proper color may show only a few days after the embalming. Articulations and visceral preparations should be dissected without delay.

3. The arteries and the veins may now be injected, if desired.

4. Now partition the subject off, that is, divide it into a number of pieces according to the preparations that it is desired to make.

5. Place each piece in a glass jar with a solution of 1 ounce of liquefied phenol to the gallon of water (C 1; see previous article).

6. Then place the specimen in an empty jar with a lid, and leave it to drain. Hang with hands and feet up. The draining requires about ten to fifteen days. Visceral preparations should not be allowed to drain more than two or three days.

7. When the dissection is completed the preparation should be placed in a jar containing a solution of 1 ounce of liquefied phenol to 1 gallon of filtered water (C 1).

8. When the dissection has ceased to purge it is placed in an empty glass jar with a lid on and is left to cure. Visceral preparations should not be cured.

9. The arteries must be painted with a vermilion red, and the veins with cobalt blue. The moist (gouache) colors are good. They should be allowed to dry thoroughly before the dissection is placed in the first solution. This drying requires fifteen to twenty hours. Experiments seem to indicate that the ordinary house-paints prepared ready for use have the advantage of doing away with these long hours of drying. The vessels to be painted with oil paints should be well mopped with cheese-cloth or absorbent gauze, and left exposed to the air for about two hours. They are then dry enough for the oil paint to take or stick. Two thin coats are better than a single thick coat. After the painting is done, leave the vessels exposed to the air for about two hours; then place them in the permanent solution.

10. Finally, the preparation is placed in a glass jar filled with a solution of 20 ounces of alcohol to every gallon of filtered or distilled water (A 20; see previous article). Visceral preparations, brains, and articulations and ligaments seem to do better in a solution composed of 20 ounces of alcohol and 1 ounce of liquor formaldehydi to the gallon of water (A 20 F 1; see previous article). The alcohol seems to prevent the snow-white bleaching action of the formaldehyd and the formaldehyd the ivory bleaching action of the alcohol.

11. The solutions should be changed as soon and as often as they become slightly cloudy or discolored. The refraction of the water has often a very marked effect in reducing the intensity of the dark brown color which the muscles present when they are out of the solution. If this could be remedied, it would be a great improvement.

I have experimented extensively with solutions of glycerin by immersing in them preparations without proper color to improve their color. It did have that result, but as soon as the preparations were placed in A 20 or any other solution the improved color disappeared and the original unsatisfactory color returned. Instead of placing these preparations in A 20 I placed them, after the curing, in paraffin oil or ordinary white petroleum oil and the improved color remained, but after awhile the oil became cloudy.

Attempts were made to paint muscles with bad color. Moist colors (brown madder) gave a good result, but in course of time the color fades. Oil paints stand better, but at close range they do not look natural.

On being removed the brain should be placed in a solution composed of 1 ounce of liquor formaldehydi and 20 ounces of alcohol to 1 gallon of water (A 20, F1). The solution must be changed as soon and as often as it becomes discolored by the blood. Preparations of the brain which require dissections should be made before the brain hardens too much. Those preparations which require only sections should be done when the brain has hardened.

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TYPHOID MENINGITIS

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Clinically and pathologically typhoid meningitis is of especial interest, because of the common occurrence of nervous symptoms during the course of a severe typhoid, and because of the several types of meningitis that occasionally occur. R. Cole[1] has critically reviewed the subject of typhoid meningitis, adding a number of new cases to a list based on bacteriologic findings. He divides the cases into three groups:

1. Meningism. Symptoms of meningitis are present but there are no meningeal lesions and no direct relation between the bacteria and the symptoms. This condition is produced by the toxins in other specific fevers.

2. Serous meningitis of Quincke, in which there are symptoms of meningitis; the brain shows, microscopically, edema and round-cell infiltration, and a serous

1. Johns Hopkins Hosp. Rep., 1904, v, 12.

exudate is present, in which is found the typhoid organism.

3. Suppurative or purulent typhoid meningitis.

For purposes of more definite classification we prefer to subdivide Class 3 into purulent typhoid meningitis with and without intestinal lesions.

The difference in symptoms between a severe typhoid with marked nervous symptoms and meningism is very slight in many cases, and of degree only. Muscular twitchings, severe headache, delirium, carphologia, stiff neck and occasional presence of Kernig's sign are seen in many typhoids, without special features. A step further and the presence of palsies, convulsions, eye lesions and vomiting makes the diagnosis of meningism or meningitis, depending on the cellular and bacterial content of the cerebrospinal fluid. A differential diagnosis between meningism and serous meningitis is made by the presence of the typhoid bacillus in the cerebrospinal fluid of the latter. Is this sufficient evidence? Is it not possible that the typhoid bacillus occurs in the cerebrospinal fluid during the course of a fair proportion of typhoids, just as it is found in the urine, gallbladder and blood in many cases? If the typhoid bacillus is present in the cerebrospinal fluid as part of a general distribution of the organism, we must assume that in many cases it produces very few, if any, symptoms and no pathologic changes; and in other cases that it produces marked symptoms and no pathologic changes; and again, marked symptoms and definite lesions of meningitis. We have studied the cerebrospinal fluid from twelve patients with typhoid fever of varying severity with a view of determining the bacteriologic content and the possible therapeutic benefit to be derived from lumbar puncture in cases with marked nervous symptoms.

Findings in Cerebrospinal Fluid of Twelve Patients with Typhoid Fever

Severity of Case.	Drops per Minute.	Color of Fluid.	Therapeutic Effect.	Culture.
1. Average	118	Clear	None	Negative.
2. Average	32	Clear	None	Negative.
3. Average	Increased pressure	Clear	None	Negative.
4. Average	Increased pressure	Clear	None	Negative.
5. Mildly nervous	104	Clear	None	Negative.
6. Mildly nervous	Increased pressure	Clear	None	Negative.
7. Nervous	80	Clear	None	Negative.
8. Nervous	?	Clear	None	Negative.
9. Nervous	190	Clear	None	Negative.
10. Nervous	Stream	Clear	None	Negative.
11. Nervous	Stream	Clear	None	Negative.
12. Nervous	Stream	Clear	None	Negative.

Cultures were made from the cerebrospinal fluid on bouillon and slant agar. To a large tube of bouillon about 7 or 8 c.c. of cerebrospinal fluid were added and about 1 c.c. on slant agar. The cultures gave no typhoid growth in any of the twelve cases. Two tubes showed a growth of staphylococcus, which was probably a contamination, as the cases were complicated by furunculosis, and by a bed-sore in one instance. In the six nervous cases, delirium, carphologia, involuntary discharges, and, in one case, stiff neck were present, and in none of them was positive improvement noted after lumbar puncture. In all cases, after the fluid necessary for cultures was withdrawn, the fluid was allowed to escape until it came to about twenty drops a minute. None of the cases showed any unfavorable symptoms after the lumbar puncture. The pressure under which the fluid escaped was almost uniformly increased in the very nervous cases. The cases were all typhoid fever as determined by the presence of a positive agglutination test, or a positive blood-culture. They were in the second to the fourth week of the disease.

Rocaz and Carles[2] report eight cases of typhoid fever in children from 4 to 12 years old, in all of whom the classical symptoms of meningitis, including Kernig's sign, strabismus and irregular pupils, were present. Lumbar puncture showed an increase in tension of the cerebrospinal fluid in all of the cases. In two cases there were a number of lymphocytes in the fluid, but in the remaining six cellular elements were lacking. Cultures from the fluid were all sterile. A marked improvement followed spinal puncture in all of the cases. The authors divide the contents of the cerebrospinal fluid of meningeal typhoids into four classes: A. Containing pus, typhoid bacilli alone, or, at times, other organisms. B. Colorless fluid containing the typhoid bacilli. C. Clear fluid with abnormal cell content, as excess of lymphocytes. D. Normal fluid but under high tension. R. Stein[3] also reports three cases with symptoms of meningitis in the course of typhoid fever in which lumbar puncture revealed a sterile fluid. Improvement followed the withdrawal of the fluid.

Under the head of serous typhoid meningitis Cole reported eight cases from the literature and added five more of his own. The interesting points are brought out that in one case recovery occurred and in several others the meningeal symptoms cleared up, the fatal issue being due to other causes. The time of the onset of the meningeal symptoms was variable and in severe cases the symptoms differed only in degree from those of a severe typhoid. In other cases the symptoms of meningitis were classical. Since Cole's paper cases of serous typhoid meningitis have been reported by Nieter,[4] A. Schutse,[5] Sicard,[6] and E. H. M. Milligan.[7]

We wish to report a case of serous meningitis occurring in a typhoid patient during the fourth to fifth week of the disease, from whose cerebrospinal fluid a motile bacillus was recovered which was agglutinated by the patient's serum, which previously had agglutinated known typhoid bacilli.

Case 1.—*History.*—P. Y., a middle-aged Austrian laborer, entered Cook County Hospital, September 29, 1909, on the service of Drs. Kerr and Elliot, with a diagnosis of typhoid fever. He gave a history of the usual prodromes of typhoid.

Examination.—On admittance the patient had rapid respirations and flushed face. His spleen was palpable and some abdominal tenderness was elicited; lungs, heart and reflexes seemed normal; temperature was 104, pulse 112, and respirations 28. The urine was acid, specific gravity 1.020, negative for sugar but positive for albumin, and microscopically hyalin and granular casts were found. The white blood-count was 3,500 and agglutination of typhoid bacilli was positive in fifteen minutes in dilution of 1 to 50.

Course of Disease.—From September 30 to October 10 the patient had involuntary discharges, was drowsy and stupid

2. Gaz. hebd. d. Soc. méd. de Bordeaux, 1908, xxxiv, 39.
3. Am. Jour. Med. Sc., 1910, i, 542.
4. München. med. Wchnschr., May, 1908, iv, 1009.
5. Berl. klin. Wchnschr., 1905, xlv, 1465.
6. Semaine méd., 1905, xlvii, 559.
7. Brit. Med. Jour., 1908, i, 1295.

and occasionally irrational. The temperature ranged from 103 to 105.2 F. per rectum. October 5, examination revealed typical findings of consolidation in the right lower lobe. The respirations became 40. On October 11 the patient had a severe chill and complained of pain in the head and abdomen. On October 13 he had another chill, and examination showed his neck to be rigid and extended. The eyes and reflexes were normal. The Kernig sign was present on the next day, and rigidity of the neck and opisthotonos were marked. Lumbar puncture was made and a clear fluid escaped at a scant 6 drops a minute. Cellular elements in the fluid were few. Cultures from the fluid showed next day a motile bacillus, morphologically like *Bacillus typhosus*, which was agglutinated by the patient's serum in fifteen minutes in a dilution of 1 to 40. From this period the patient grew constantly worse and developed twitchings of the muscles and stupor, and died October 18. Unfortunately no autopsy was obtained.

In reviewing the literature on purulent typhoid meningitis Cole found many cases reported, but few bacteriologically proved. He cites fifteen authentic cases, all showing intestinal lesions. In these cases the onset was acute, beginning in the second or third week of the typhoid and lasting from two to seven days. They were all fatal. Kernig's sign was absent in two out of three cases. Netter has reported 313 uncomplicated typhoid cases with the Kernig sign present forty-four times. Since Cole's communication no other cases of purulent typhoid meningitis with intestinal lesions have been reported.

We wish to report a case in a 4-year-old girl, in whose cerebrospinal fluid typhoid bacilli were present during life, and at the autopsy, were isolated from the meninges, lateral ventricles and cord. Characteristic intestinal lesions were found at autopsy.

CASE 2.—*History.*—Annie S., 4 years old, Belgian, entered Cook County Hospital, June 20, 1908, on the service of Drs. Abt and Butler. The history of her illness was unsatisfactory, but her parents had noticed that she had had fever, no appetite and had been extremely restless during the week previous to admission.

Examination.—The patient was a well-nourished but restless child with flushed face and sordes on the lips. The neck was not rigid, no herpes were visible and the tongue was dry and coated. The pupils were equal and reacted normally; heart beat 180, and lungs normal. The abdomen showed no rose spots, was not tympanitic, tender nor rigid; spleen was not palpated; knee-jerks were not elicited, neither was there any Kernig sign, ankle-clonus or Babinski sign. Temperature on entrance was 104 F, pulse 136, respirations 36. The white cells were 6,000 per cu. mm.

Course of Disease.—The next day the general symptoms improved. There was no agglutination in a dilution of 1 to 40. On June 24 the spleen was palpable and there was a positive diazo reaction in the urine, which was otherwise normal. The patient was very sick at this time and extremely restless, tossing about continuously. Leukocytes on June 29 were 9,500. On June 30 the patient's condition was very poor. She lay in a stupor with divergent strabismus and stertorous breathing. Heart and lungs were normal. There was still no rigidity in the neck and Kernig's sign and ankle-clonus were absent. The feet were in marked plantar flexion and a suggestion of a Babinski sign was present. Agglutination still was negative. In the evening there was a positive Kernig, rigid neck, opisthotonos, and the respirations were Cheyne-Stokes in character. The pupils were equal but reacted sluggishly to light. The next morning the pupils were unequal, the left being larger than the right, and twitching of the corrugator muscle was noticed over the left eye together with twitching of the left cheek and left hand. Opisthotonos was marked, the hands were in flexion and the back was board-like. The ears were normal. Temperature was 107 F.; pulse could not be counted. By lumbar puncture about seven drams of a turbid, opalescent fluid escaped under pressure. This fluid was secured in a sterile test-tube and cultures were immediately made in bouillon. A smear made of the fluid was found to contain equal numbers of polynuclear and mononuclear leukocytes and great numbers of short, thin bacilli, mostly extracellular. These organisms were Gram-positive. No tubercle bacilli were present. The patient died at 2:15 p. m.

Macroscopic Post-Mortem Findings.—Twenty-three hours later, the ileum and jejunum were found to be the seat of an extreme degree of ulcerative enteritis. In all there were forty ulcers, round or elliptical in shape, longitudinal to the axis of the bowel and occupying the position of Peyer's patches. The base of the ulcers in several instances was on the serosa. Almost all were in the stage of healing, and the shaven-beard appearance was frequently seen. There were no lesions in the duodenum, appendix or colon. On opening the skull cavity the dura was found adherent to the calvarium. On removing the dura a greenish-yellowish exudate was found filling the sulci and following the course of the vessels. At the base of the brain was found about two ounces of a cloudy flocculent exudate. The vessels of the brain were everywhere injected. Considerable bloody fluid was found in the lateral ventricles. The base and cortex of the brain seemed to be equally involved in the inflammatory process. On opening the dura of the cord a quantity of cloudy purulent fluid escaped. The vessels of the cord were prominent and injected. All levels of the cord were involved. The post-mortem diagnosis was: (1) acute purulent cerebrospinal leptomeningitis; (2) typhoid ulcerative enteritis; (3) acute splenitis; (4) mesenteric lymphadenitis; (5) right fibrous pleuritis; (6) passive hyperemia of the lungs and kidneys.

Microscopic Post-Mortem Findings.—Microscopically, different sections of the brain showed a thick cellular exudate over its surface, dipping down into the sulci. The blood-vessels on the surface of the brain were dilated and surrounded by thick masses of exudate, but in no place was the intima of the arteries lifted up by the cells of the exudate, as described by Ohlmacher in his case. In the walls of the vessels and in their proximity, especially, were seen large cells almost four times the size of a polynuclear cell, with vesicular, bladder-like nuclei. These cells were not observed to contain bacilli, which were numerous throughout the exudate. The cellular elements of the exudate varied in different places. In some areas the polynuclears numbered as high as 80 per cent., and in others the cells seemed to be mostly mononuclears. The large mononuclears were in preponderance. The brain membranes were almost exclusively involved in the inflammatory process as the brain substance itself seemed quite normal. The changes in the cord were similar to those described in the brain. The exudate seemed to be composed of polynuclear and mononuclear leukocytes and was especially marked about the anterior roots in the subdural space. There were also patches of extradural exudate and mononuclear cells were seen in the central canal of the cord.

Bacteriology.—Cultures made in bouillon from the cerebrospinal fluid during life showed a diffuse cloudy growth at the end of twenty-four hours. Hanging drop revealed motile bacilli with motion of the whirling, darting type. A smear from this culture showed many short thick-and-thin bacilli which were Gram-positive. Subcultures were made from the bouillon culture on the following media:

Agar Slant.	*Litmus Milk.*	*Potato*	*Glucose-Agar.*
	24 Hours		
Slight, whitish, pearly growth.	Faint pink....	Faint dry line.	Deep growth; no gas.
	48 Hours		
Only slightly increased growth.	Lilac pink.....	Moderate	No gas.....
	6 Days		
Growth still localized.	Still lilac pink.	No odor; moderate.	No gas.....

No indol in sugar-free bouillon.

With known typhoid blood this bacillus was agglutinated in a dilution of 1 to 40 inside of an hour.

At the autopsy cultures were made from the heart's blood, the pericardial fluid, bile, cerebrospinal canal, base of the

brain, lateral ventricles and dura. Smears of these fluids, except the heart's blood and pericardial fluid, showed a short thick-and-thin bacillus. The typhoid bacillus was isolated in pure culture from the base and cortex of the brain, lateral ventricles and from the spinal cord. The colon bacillus was isolated from the bile. The typhoid bacilli, thus obtained, were agglutinated by the serum of a known typhoid.

Extremely interesting and somewhat rare are the cases of typhoid without intestinal lesions. Flexner and Harris[8] reported a case with an acute splenitis, with no intestinal lesions, in which typhoid bacilli were isolated from the spleen, lung and liver in pure culture. Opie and Bassett[9] report a similar case, clinically typhoid, with no intestinal lesions, but in which typhoid bacilli were found in the liver, gall-bladder and kidney. Neumann and Schaffer[10] report a case of suppurative meningitis, due to the typhoid bacillus, without intestinal lesions. Henry and Rosenberger[11] report a case of purulent typhoid meningitis with a bacteriemia, enlarged spleen and enteritis, but no ulceration of Peyer's patches. Southard and Richards[12] report a case of suppurative typhoid meningitis, in a tabo-paretic with bronchopneumonia, in whom there were no intestinal lesions, but typhoid bacilli were isolated from an enlarged mesenteric gland. R. S. Lavenson[13] reports a localized collection of pus in the pia arachnoid on the left and right cerebral hemispheres in a case from which typhoid bacilli were cultivated from the cerebrospinal fluid *intra vitam*. Smears from the pus at autopsy showed Gram-negative bacilli. The spleen was not enlarged and the intestines were normal.

We wish to report a case of suppurative typhoid meningitis with a bacteriemia without intestinal lesions, in which the typhoid bacillus was isolated from the cerebrospinal fluid during life and at autopsy.

CASE 3.—*History.*—J. S., aged 48, entered the Cook County Hospital, Jan. 8, 1905, on the service of Drs. Preble and Reed. He was in a semiconscious condition.

Examination.—The temperature was 102 F. and pulse was 104. There was no enlargement of the spleen; reflexes were sluggish; leukocytes, 9,500 per cu. mm.

Course of Disease.—On the second day the patient had a convulsion which lasted ten minutes. Distinct nystagmus, vertical and horizontal, was present and the head and eyes were turned toward the right. On the third day he developed stiffness of the neck and legs and a lumbar puncture was made. A small amount of turbid fluid dropped out under no pressure. Smears of this showed an equal number of polynuclear and faintly staining mononuclear cells. A considerable number of organisms were present which were either diplococci or short bacilli in pairs. They were arranged in chains or pairs of four and were not intracellular, nor did they stain by Gram stain. Cultures were made from the spinal fluid as well as from the blood. In thirty-six hours these cultures showed a pure growth of a very short, thick bacillus, actively motile, Gram-negative, which grew culturally like *B. typhosus*. On the fifth day the eye-grounds were examined and found negative, but Kernig's sign was positive and the tongue protruded to the right. The nystagmus was less pronounced. Goose-flesh phenomenon was seen on the left side of the body, there being a sharp dividing line anteriorly and posteriorly. The patient was semicomatose; temperature 106.4 F. The patient died on the fifth day at 12:30 p. m.

Macroscopic Post-Mortem Findings.—The necropsy was held two days later by Dr. Reed. The anatomic diagnosis was purulent cerebrospinal leptomeningitis, chronic diffuse nephritis, atrophic cirrhosis of the liver, old depressed fracture of the skull, epigastric hernia, pulmonary congestion and edema.

The intestines were entirely normal. Peyer's patches were neither swollen nor ulcerated. The spleen weighed 280 gm. and had five notches. Its pulp was soft but the markings were quite distinct. On opening the skull cavity the dura was found adherent to depressed bone at the site of an old fracture. The meninges were much injected over the vertex, and above the Sylvian fissure was a fibropurulent exudate in the pia following the lines of the vessels on both sides and along the longitudinal fissure and temporal lobes. The exudate was more marked along the perforated spaces at the base of the brain, covering the pons and the region between the medulla and cerebellum and the upper surface of the cerebellum. In the lateral ventricles was a turbid, bloody fluid. The meninges of the cord were hyperemic in their whole extent, and beneath the meninges was a fibrinous exudate.

Microscopic Post-Mortem Findings.—Sections of the cord, occipital lobe and cerebellum were examined microscopically. In all there was a large amount of exudate on the meninges, composed mostly of polynuclear and large mononuclear cells. This exudate was most intense around the veins and arteries and separated the meninges freely from the substance of the brain and cord. In no instance was the exudate present in the brain substance. In the sections studied there was not observed any lifting of the endothelium of the vessels by exudate. In the sections stained with methylene blue there were numerous bacilli seen, arranged in chains of three and four. No other organisms were seen.

Bacteriology.—Cultures were made at the autopsy by Dr. Stober. The *Staphylococcus albus* was grown from the pericardial fluid. The colon bacillus was isolated from the cord, cerebrospinal fluid, lateral ventricles and meninges of the brain. The typhoid bacillus was isolated from the cerebrospinal fluid and its identity made certain by subcultures, the description of which we omit. This organism was agglutinated by known typhoid serum in a dilution of 1 to 40 at the end of forty minutes.

8. Bull. Johns Hopkins Hosp., 1897, viii, 259.
9. Bull. Johns Hopkins Hosp., 1901, xii, 198.
10. Virchows Arch. f. path. Anst., 1887, ix, 477.
11. Am. Jour. Med. Sc., 1908, i, 240.
12. Jour. Med. Research, 1908, p. 513.
13. Univ. Penn. Med. Bull., 1908, xxi, 55.

SUMMARY

Typhoid bacilli are not found in the cerebrospinal fluid in uncomplicated cases of typhoid fever.

Typhoid patients suffering the ordinary nervous manifestations such as delirium, involuntary discharges, carphologia and severe headache are not benefited by withdrawal of cerebrospinal fluid, although the fluid may be under increased tension.

In typhoid patients showing classical symptoms of meningitis, the cerebrospinal fluid may be sterile, but lumbar puncture and withdrawal of fluid has improved the clinical condition in a striking way in some cases.

When typhoid fever patients show meningeal symptoms such as rigidity of the neck, Kernig's sign, convulsions, strabismus or irregularity of the pupils, lumbar puncture should always be done, and the fluid obtained examined bacteriologically and microscopically.

72 East Madison Street—5831 Washington Avenue.

Abdominal Pain and Loose Sacro-Iliac Joint.—There is one source of pain, and an important one which it behooves the surgeon always to be looking for, and that is the one due to loose sacro-iliac joint, first discovered, investigated and heralded by Joel E. Goldthwait of Boston (*Boston Med. and Surg. Jour.*, 1905, pp. 593, 643). This pain is apt to be associated with more or less severe backache, generally on one side over the sacro-iliac joint. It sometimes extends through to the front of the joint, where it is most apt to be mistaken for an affection of some pelvic organ. It can, as a rule, be demonstrated by a shortening of the affected leg and by rotating and forcing it strongly or by pulling it outward. In other instances the reasoning is more by exclusion. The therapeutic test is a valuable one, as most of these patients are relieved by a strong bandage made like a surcingle.—H. A. Kelly, in *Interstate Medical Journal.*

A CASE OF EPITHELIOMA OF THE VULVA AND A CASE OF RECURRENT GROWTH OF THE MEATUS URINARIUS TREATED BY IONIC SURGERY AND PLASTIC OPERATIONS*

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The case of epithelioma of the vulva is reported as presenting somewhat unusual features, and also as illustrating one type of malignant growth for which the ionic method of destructive sterilization is peculiarly adapted. The permanence of the result attained is fairly assured by the fact that nearly two and a half years have passed since the operation was performed. The salient points of this case were as follows:

Patient.—Miss E. Z., aged 49, was referred to me by Dr. Marie Formad, of Philadelphia, June 16, 1908.

History.—Four years ago a lump the size of a pea appeared on the right labium majus; it increased in area and ulcerated. Two years ago, Dr. Formad sent her to a hospital where a microscopic examination was made and the case pronounced inoperable. During the past two years the increase in the area of the growth has been rapid.

Examination.—The condition on admission to the Oncologic Hospital was as follows: An eroded and proliferated surface extended from the clitoris to a point below the anus, involving the whole vulvar area and extending some distance into the urethra, vagina and rectum. There was a characteristic discharge accompanied by a foul odor. No enlarged glands were discoverable. The blood-examination showed erythrocytes, 5,550,000; leukocytes, 5,800, and hemoglobin, 81 per cent.

Treatment.—On June 24, 1908, the patient was placed under ether and a major monopolar application of zinc-mercury ions was made with a current of from 1,000 to 1,200 milliamperes for one hour. This application was accomplished by the ionic dissolution of sixteen zinc needles, each heavily coated with quicksilver and inserted in the periphery of the growth. The needles were connected with the positive pole of the direct current, the negative being a large kaolin pad under the patient's back. On separation of the large mass of sterilized tissue two weeks later an immense cloaca-like opening was revealed, into which the three pelvic outlets coalesced, the cavity extending so far on the right as to expose the lower edge of the pubic ramus. The wound was painless, and filled in rapidly. By August 18 the patient had regained partial control of both rectum and bladder.

Subsequent History.—Four months after the operation the floor of the pelvis had become partially replaced by healthy scar tissue, though this tissue was insufficient to prevent a protrusion of the vaginal and rectal walls, the prolapsed anterior vaginal wall containing a cystocele and giving marked discomfort when the patient sneezed or laughed. Dr. Longenecker, of the hospital staff, kindly did a plastic operation at this time on the anterior vaginal wall, with excellent results.

Plastic Operation.—Ten months after the ionic operation the cicatrization was still incomplete at a central point around the urethral opening, this opening existing at about the middle point of the normal urethral length, the external portion having been involved in the disease and destroyed at the operation. It was decided that a plastic operation for covering the bare area would be tried, and this was done by Dr. Hewson, April 18, 1909, a square flap of skin and subdermic tissue being dissected from the left side of the scar and side of the thigh and transferred to the freshened surface, an opening having been made in the middle of the flap to correspond with the urethra. A soft catheter was placed securely in the partly artificial urethra thus made and kept in position for six days, leaving some vesical irritation.

Result.—At the present time, two years and five months since the ionic operation, there is no evidence of recurrence of the malignant growth, and the patient's only discomfort is due to the practical absence of the lower rectal sphincter, making it difficult to retain flatus, and permitting soiling of the clothing when the feces are unformed. The bladder retains some of the sensitiveness acquired at the time of the last plastic operation, and micturition is somewhat precipitant.

Examination of Growth.—A specimen of the tissue was removed just prior to the ionic operation and was reported on as follows by Dr. John M. Swan, the pathologist of the hospital:

"A piece of tissue from the vulva, submitted for examination: The specimen is composed of skin and subcutaneous tissue. The epidermis has grown down into the underlying connective tissues, where it forms irregular islands of epithelial cells surrounded by young connective tissue. The cells in the epithelial islands are squamous in type. There are no pearly bodies. Diagnosis: squamous-celled epithelioma of vulva."

The other case to which I invite attention is an illustration of the difficulties that sometimes surround the diagnosis of growths of the urethral orifice in women. The appearance presented by this growth when first seen was that of a typical caruncle, the bright red color of the round protuberance showing within the urethral orifice, and its exquisite tenderness, both indicating a benign neoplasm. Yet a measure of destructive sterilization adapted to such a diagnosis was followed by the recurrence of a distinctly malignant growth in the same situation a few months later. The successful destruction of this second manifestation of the growth by an ionic application fully adapted to the malignant conditions will illustrate also, I think, the value of this form of surgery in this situation, and the opportunity that it presents for conserving the unaffected urethral tissues.

Patient.—Miss F., aged 33, was referred to me by Dr. J. B. Shaw, of Trenton, N. J., May 12, 1909. Her father died of cancer of the liver, otherwise the family history was negative. During the past five years the patient had lost 35 pounds in weight, and for two years she had suffered from a burning sensation at the urethral opening, greatly aggravated by the passage of urine, and from a more constant soreness referred to the bladder, with considerable mucopurulent leukorrhea.

Examination.—The patient was rather thin and somewhat bronzed in color. Inspection revealed a bright red caruncle-like body the size of a pea projecting slightly from the meatus urinarius. It was smooth and excessively tender to the touch. On urethroscopic examination the caruncle could be traced as an elongation up the urethra about one inch, it being attached as a sessile growth to the right side of the urethral mucous membrane.

Treatment.—The patient was admitted to the Oncologic Hospital and placed under ether for ionic destruction of the growth May 13, 1909. After etherization, a specimen was removed for microscopic examination; this caused free hemorrhage, which was quickly arrested by placing a zinc-mercury needle in the wound and turning on from 30 to 40 milliamperes of the direct current, positive. The hemorrhage being controlled, another positive zinc-mercury needle was thrust into the base of the growth, and, with both needles active, the current was raised to 80 milliamperes and maintained at this strength until the whole of the growth appeared to be devitalized and white, the total duration of the application being sixteen minutes.

Result.—The patient required catheterizing for twenty-four hours, after which time urine was voided. There was no rise of temperature. The small slough separated one week later, and the patient was discharged from the hospital at the end of two weeks.

* Read before the Obstetrical Society of Philadelphia, Dec. 1, 1910

Examination of Growth.—The specimens removed were submitted to Dr. Swan, who made the following uncertain report, the cause of the uncertainty possibly being the failure to secure a portion of the base of the growth.

Pathologic Report on First Specimen.—"A few fragments of tissue removed from the external urinary meatus. The tissue is composed of a surface epithelium of the stratified squamous type lying on a connective tissue groundwork. The majority of the sections are of such a nature that no opinion can be given as to their character, but in one slide the connective tissue portion of the specimen is composed of a loose reticulum of cells of varying type mixed with an extensive exudate of red blood-corpuscles. Many of the cells, I believe, are epithelial cells, and I think the tumor is malignant, but I am not prepared to give an opinion as to its proper classification. Diagnosis: questionable."

Subsequent History.—The patient was kept under close observation, and seven months later (Dec. 13, 1909), there was distinct evidence of a recurrence of the growth in the shape of an ulceration at its site with raised, hard edges that refused to heal. She was readmitted to the hospital under the belief that the growth was originally and still malignant, with a view to its thorough destruction. On this occasion a current of 200 to 300 milliamperes was employed for double the previous time, or thirty-four minutes, and with six larger needles completely circling the growth at its base. Both operations were monopolar, that is, the negative pole was a large kaolin pad beneath the patient's back. Special efforts were made at this second operation to reach the highest point of the growth in the urethra with as little loss of muscular tissue as possible.

Pathologic Report on Second Specimen.—The pathologic report on the specimen removed at this time is as follows: "Three fragments of tissue removed near the orifice of the urethra, submitted for examination. The largest of these fragments is composed of very much hypertrophied squamous epithelium, which is in one place thrown into numerous folds so that it resembles the duct of a gland. Many of the cells of this epithelium are hydropic. No place can be found in which this epithelium extends into the underlying connective tissue, but the connective tissue just beneath it is the seat of a very well-marked round-celled infiltration, and these cells are principally of the plasma-cell type. The tissue is markedly congested, and in some places there is free hemorrhage. The round-celled infiltration above referred to is seen in scattered areas throughout the connective tissue, here and there associated with polymorphonuclear cells. There are a great many new blood-vessels in the tissue. One of the smaller bits is elliptical in outline, surrounded throughout its entire extent with a stratified squamous epithelium which does not dip down into the underlying connective tissue. This connective tissue is rich in blood-vessels, which are filled with blood, and shows numerous fibroblasts, and areas of small round-celled infiltration of the plasma cell type, mixed with lymphocytes. The third piece is composed of masses of round cells of varying type; polymorphonuclears, lymphocytes, plasma cells and fragmented nuclei. The tissue contains numerous blood-vessels with fairly thick walls. In several places there is free hemorrhage. In one part of this piece the endothelial cells forming the walls of the blood-vessels appear to be proliferating. Diagnosis: infective granuloma (?)."

Third Operation.—On Feb. 24, 1910, the patient was admitted a third time for the destruction of three nodules of bright color at the meatus. A current of from 100 to 150 milliamperes was used for twelve minutes, with three needles.

Result.—Her progress thereafter was steady, the parts closing in with tissue of normal color, somewhat retracted, but with complete control of the bladder and absence of unpleasant sensations, except a hypogastric discomfort for a time, apparently referable to the bladder. At present, ten months after the last operation, there is smooth scar tissue occupying the whole site of the growth, the external layer being regenerated mucous membrane by peripheral budding. The urethra seems healthy and of normal caliber, with the meatus retracted about one inch. This retraction has tilted the anterior wall of the vagina outward at the urethral orifice. The patient's unpleasant sensations on micturition have ceased and she has good control over the bladder. No evidence of a return of the disease can be found, and she has gained in weight and color.

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EARLY DIAGNOSIS OF GALL-STONE DISEASE

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The success of surgery of the bile-tract within the last ten years is due to more effective cooperation between the surgeon and the general practitioner, to closer observation of pathology, and to the contributions of experimental medicine. The opportunity of the surgeon to study pathology at the operating-table has brought about a clearer understanding of the significance of symptoms which heretofore have not been appreciated. The great work done by the Mayos and their associates, by Deaver, Moynihan and others, in calling attention to pathologic conditions found in the living has revolutionized our former conception of gall-stone disease. We now know that gall-stones, instead of being frequently present without symptoms, create a distinct type of clinical phenomena, which in the past we did not properly interpret. The picture of the terminal stage has been too frequently used for a general description of gall-stone disease.

The close association of the organs of the upper abdomen often causes diseases of any of these organs to find expression in the stomach. To assign these stomach symptoms to their real cause requires careful study. Except in ulcer or cancer, the stomach is seldom the seat of primary trouble, though it may be the agent through which distress in many abdominal organs may manifest itself.

The classical picture of gall-stone disease, accompanied by attacks of severe pain radiating to the right shoulder, nausea, vomiting and jaundice, is a late stage and results from complications that a calculous cholecystitis may cause. It is most unfortunate that these symptoms are still regarded by many as necessary to a diagnosis, thereby delaying proper treatment and prolonging disability. To prevent complications such as adhesions, perforation, obstruction of the common duct and chronic pancreatitis, it is necessary to recognize what Moynihan calls the "inaugural symptoms" of gall-stone disease, and to dismiss from our minds the typical text-book description of gall-stone colic.

Disease of the gall-bladder has its own type of digestive disturbance. According to Graham, we may distinguish four stages in its development and symptomatology.

In the first stage we see mild disturbance of the stomach, which occasions little distress to patients or anxiety to the physician. Irregular attacks of indigestion accompanied by gas formation and a feeling of epigastric constriction or tightness are observed. These discomforts are sudden in their onset and are frequently accompanied by chilliness, belching, regurgitation, or vomiting. Such dyspeptic attacks, sudden, irregular and mild, are as characteristic of early gall-bladder disease, as the typical attacks of gall-stone colic, which may ensue unless the trouble is recognized and proper treatment instituted.

In the second stage the disease occurs with pain, which may be dull or severe, and is located under the right costal arch. This pain may be aggravated by food, by sudden exertion or deep inspiration, and unless a careful physical examination of the chest is made, the physician may explain the symptoms by a diagnosis of pleurisy. These attacks of pain and dyspeptic disturbances are frequently evanescent in type, and with their going the patient enters on a period of good health.

In the third stage we have attacks of gall-stone colic, and here the diagnosis is easy. It is in this class of cases that the surgeon is most frequently called. These patients come with a well-defined history of sudden, excruciating pain located in the upper part of the abdomen, radiating to the right scapula and attended by nausea and vomiting. We have here, also, gas formation and spasm of the diaphragm; vomiting may give partial or complete relief, though morphin is most frequently required. A characteristic of these attacks is the suddenness of the onset and disappearance. The patient is unable to trace any connection between the beginning of the attack and the taking of food. Even in this advanced stage of the disease there may be a return of perfect health, which may continue for an indefinite period, to be suddenly interrupted in most cases by another severe attack.

The fourth stage represents chronic gall-bladder disease, with further complications of adhesions, obstruction of the common duct or pancreatitis. The diagnosis is not clear in this type unless the history of the case is carefully studied. Too frequently the significance of the symptoms or the urgency of the case is not appreciated until this stage is reached, and in view of former teaching, such a mistake is entirely reasonable.

Unless one has seen patients with gall-stone disease in the first or second stage operated on, it will be difficult for one to appreciate the constancy with which operation in these cases shows pathologic conditions of the gall-bladder. That operation relieves such patients and cures their "dyspepsia," is amply proved by the large number of patients operated on in most of the clinics in this country. These patients, who have definite symptoms of the first or the second stage, and are cured by operation, are the best proof of the association of gastric disturbances with the presence of gall-stones. Occasionally, we see cases in which the gall-bladder is packed with stones, thickened and adherent, and still there have been no symptoms other than the gastric disturbances already mentioned. The following case in the service of Dr. J. Shelton Horsley illustrates this point.

CASE 1.—*History.*—Mrs. P., aged 37, a thin, emaciated woman, had suffered with stomach trouble and indefinite dyspepsia for the past twenty years. She complained of a "dull, aching, swollen feeling" in the upper abdomen, which sometimes radiated to the right shoulder and was frequently made worse by eating. She had had considerable bloating and belching. There had been no colic, jaundice, or pain severe enough to require a physician. Vomiting, which occurred only a few times, brought relief, though she usually obtained relief by drinking hot water. She said, "I have taken a lot of medicine for indigestion, which would relieve me for a while."

Diagnosis and Treatment.—Cholecystitis, with probably enlarged gall-bladder. Operation showed that the gall-bladder was enlarged, adherent to the anterior abdominal wall and surrounding tissues, and its walls thickened from chronic inflammation. It contained a thick purulent fluid, twenty-two large stones, with one stone completely occluding the cystic duct. We have here an illustration of the fact that even advanced pathologic lesions of the gall-bladder may exist in a patient who complains of nothing but stomach trouble and slight pain. A letter recently received from this patient states that she is feeling better and weighs more than she has for sixteen years.

In making a diagnosis of gall-stone disease the etiologic possibilities should be gone into. It has long been noted that gall-stones often occur after typhoid fever, and are most frequent in women after pregnancy. It is probably also true that any systemic infection which produces toxins that irritate the mucosa of the gastro-intestinal tract may be a cause of cholecystitis, which, as we know, in its mild form is a forerunner of gall-stones. In the following case the patient's symptoms dated quite definitely from an attack of influenza.

CASE 2.—*History.*—Mr. D., aged 45. The patient has had recurring pains in the epigastrium and lower abdomen for the past eighteen months; was well up until that time, when he contracted influenza. Since then he has had indigestion and pain in the stomach and lower abdomen. Pain and attacks of indigestion were irregular and alternated with periods of partial relief. There was no history of colic, cramps or jaundice, but his complexion he thought was slightly tinged at times.

Diagnosis and Treatment.—Operation showed cholecystitis and chronic appendicitis. The appendix was removed and the gall-bladder drained. This case gave a somewhat mixed type of stomach disturbance from both the appendix and the gall-bladder and may be an instance of cholecystitis from a general influenzal infection. The experiments of Else show that the gall-bladder is frequently infected through the general circulation and not through the portal system. If we accept his conclusion we can readily believe that a severe systemic infection without intestinal lesion could produce gall-bladder trouble. The operation revealed an appendix that was inflamed and moderately diseased and a gall-bladder somewhat thickened and congested and containing thick dark bile, but no stones. Removal of the appendix and drainage of the gall-bladder were followed by prompt recovery.

This patient was a farmer and had been in good health until the attack of influenza. So the relation of cause and effect between the influenza, the cholecystitis and the appendicitis may be assumed with apparent justification. It is probable that in such a case the gastric and intestinal mucosa are as much irritated as that of the gall-bladder and appendix, but the poor drainage of these two organs seems to render them unable to throw off the effect of the irritation as the stomach and intestines do.

Gall-bladder disease must be differentiated from ulcer, cancer, gastric neurosis, and reflex disturbance from chronic appendicitis. In ulcer of the stomach and duodenum there is a history of pain in the upper abdomen, coming on from one and one-half to four hours after meals, and relieved by food or by vomiting or by alkalies. The periodicity in ulcer is lacking in gall-stones. There is a definite relation between the taking of food and the relief of pain in ulcers, which contrasts with the sudden, irregular, and fleeting attacks of cholecystitis, which, in most cases, are not influenced in any way by eating. Formation of gas and the feeling of constriction, with belching, constitute a type of disturbance which accompanies gall-bladder trouble and which is not often found in ulcer.

Cancer of the stomach in about 70 per cent. of cases is said to result from ulcer, and its incipiency is diagnosed with great difficulty. A history of previous ulcer of the stomach should warn us of the approach of malignancy, and suggest a careful study of the case and gastric analysis. In cancer, the appearance of the patient, the irregular vomiting and the disgust for food, contrasted with the symptoms and well-preserved appearance of the patient suffering with ulcer or gall-stones, should be of

some assistance in making a correct diagnosis. Blood is rarely found in gall-bladder cases. In ulcer it is present in one-fourth as against two-thirds of the cases of cancer of the stomach. Gastralgia is found in neurotic individuals, is relieved by pressure, and is not usually attended by nausea or vomiting. It is significant that a more thorough study of the pathology of lesions of the stomach and associated organs of digestion materially reduces the number of patients suffering with so-called gastralgia and other neuroses.

We might be called on to distinguish the girdle pain of locomotor ataxia from an attack of gall-stone colic. Here the Argyll-Robertson pupil, Romberg symptoms, loss of tendon reflex, and other signs of tabes would serve to differentiate.

Disturbance arising from the appendix, shown by gastric indigestion and pyloric spasm, are extremely difficult of diagnosis from primary gall-stone disease, and the two troubles frequently co-exist.

There may be no tenderness over McBurney's point or any other of the usual signs of appendicitis except a type of continuous stomach trouble. In these cases, however, the history may show an attack of appendicitis, which was not treated at the time of its occurrence, and the patient is able to date his indigestion from this attack. There is generally a loss of weight and considerable impairment of health. The effect of food on the pain is variable and the pain is usually in the neighborhood of the umbilicus. In appendical dyspepsia, its continuous type is in marked contrast to the fleeting, irregular and sudden attacks of gall-bladder trouble, and to gastric ulcer, in which there is generally a definite relation between pain and the taking of food. Cannon, of Boston, has succeeded in producing erosion and ulceration of the stomach by the injection or irritants in the cecum. These experiments would seem to indicate that even organic trouble of the stomach may be produced by disturbance in the region of the ileocecal valve.

The only satisfactory treatment of gall-stones is their surgical removal. Occasionally patients recover after passage of the stone by ulceration through into the bowel or into the stomach, or the patient may go through life a chronic dyspeptic and die of some other disease. It is as much the mission of physicians and surgeons to relieve morbidity as to lower mortality, and though the relation between these two things is not always directly apparent, it nevertheless exists in every case. A patient with indefinite stomach trouble, such as is found in the early stage of gall-stone disease, is more susceptible to other diseases, even if the gall-bladder trouble never assumes a threatening attitude in itself.

The medical profession is practically going through now, in regard to gall-bladder disease, what they have already learned in regard to appendicitis. The modern physician does not think of waiting in appendicitis until an abscess has formed, but recommends that the appendix be removed as soon as it is known to be diseased. So in the case of gall-stones, instead of waiting until the patient has had the early stages and has begun to suffer from colicky pains, vomiting and jaundice, the gall-stones should be diagnosticated in the first stage when the irregular attacks of gastric disturbance, with the feeling of constriction and the formation of gas in the stomach, show that as yet there has been practically no organic change in the liver, gall-tracts, or pancreas. Removal of the stones at such a stage will almost certainly insure a return of the patient to perfect health.

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VACCINATION AND SMALL-POX IN JAPAN

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Since Jenner introduced the practical use of vaccination over a century ago, mankind in general has been well protected from the cruel onslaught of small-pox wherever the process is carried out. We are greatly surprised every now and then to find antivaccinationists among people far advanced in civilization like those of the United States of America. I should, however, never have attempted to make any criticism on their presumption, had not one of them, namely, Dr. Hodge, of Niagara Falls, referred to the facts gathered from our Japanese statistics in his paper in the *Twentieth Century Magazine*. I may be permitted, therefore, to try to make clear how vaccination is serving to wipe out small-pox in Japan.

I. EPIDEMIOLOGIC OBSERVATIONS ON SMALL-POX AND ON PREVENTIVE MEASURES IN JAPAN

The free communication between Japan, China and Corea in earlier days was the source which gave rise to great epidemics of small-pox quite frequently, until at last vaccination was introduced. Japanese history tells us that small-pox was imported for the first time into Kyushyu in the month of February, 123 B. C., after which it gradually spread toward the east as far as Kyoto, causing a great epidemic all over the country, creating sad havoc, and strewing the high roads with the dead and dying. From this first great epidemic down to 1868, when the restoration of the present Meiji Era set in, about fifty epidemics broke out, each one of which extended over a number of years, sweeping all through the country, diminishing the population considerably and devastating the fertile country everywhere. Towards the end of the Tokugawa Shogunate the measure introduced by Jenner was adopted in Japan, with what favorable results we shall see below. During the ten years from the beginning of the Meiji Era—i. e., 1875-1884—the number of patients suffering from small-pox averaged 2,008.1 per hundred thousand population, while the deaths were only 494.6, which was deemed to be a remarkable improvement.

One of the greatest epidemics of small-pox during the past forty years broke out in 1885 and lasted three years, with 125,315 cases and 31,960 deaths. The epidemic began to decline in 1888. It reappeared in 1892 and again lasted three years. During this second outbreak 88,095 cases were recorded, of which 23,603 patients died. The third outbreak extended over two years, 1896-1897, with 52,650 cases and 15,664 deaths. During the next ten years, a few cases were imported from China every now and then, without any ensuing serious outbreak. Since 1900, the cases in the whole empire were remarkably few, until in 1907, when the disease reappeared at Kobe. This caused an uncommonly severe epidemic, which spread all through the empire. It began to die out in the spring of 1908. During this fourth epidemic 19,101 cases and 6,273 deaths were reported. This outbreak, however, completely subsided by July of the same year, without any trace left. The diagram inserted shows these epidemics most clearly.

Let us now turn our attention to what has been done to avoid the wretched results brought about by small-pox in Japan. In olden times when people were ignorant of what measures they should apply, they resorted to

superstitious means to attempt to subdue the natural processes. One of the scientific measures, i. e., variolation, was introduced by a Chinese merchant, Lee-Nin-Shan, in the year 1745. That often caused an outbreak of small-pox, and so many fell victims to it that people felt that they were doomed to suffer from small-pox once during their lifetime.

In 1849, i. e., fifty-three years after Jenner had introduced vaccination, the process was first demonstrated in Japan by a Dutch physician, Monicke. The Japanese people were soon convinced of the marvelous effects of vaccination. Vaccinating stations were established in various great cities, e. g., Yeddo (now Tokyo), Kyoto and Osaka, in order to give the public the benefits of vaccination on a broader scale.

Japan, at that time, underwent a political change, and even medical science, which had begun to follow the teachings of the European school, was forbidden to continue by the Shogunate government. Vaccination was the only survivor of the newly introduced methods of the European school. This fact alone explains how far even the obstinate Japanese authorities were convinced of the efficacy of vaccination. The radical change

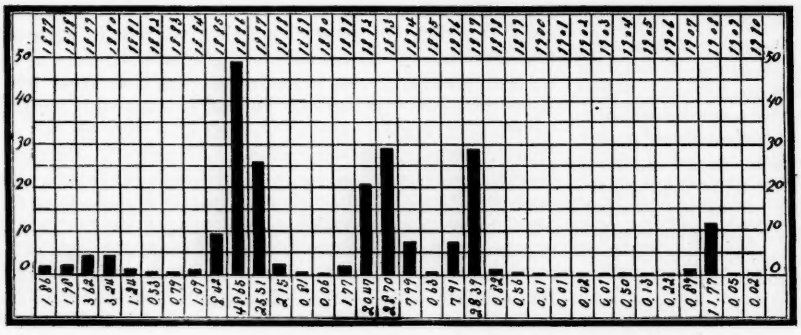

Diagram of small-pox mortality in Japan.

of government just forty-four years ago, which is known to history as the Restoration of the Meiji Era, brought about a completely new mode of politics, everything Occidental being introduced. In 1874 the first vaccination law was enacted, and in 1876 the regulations for the prevention of small-pox were promulgated, which provided for compulsory vaccination. In 1885 a revised law concerning vaccination was enacted. It comprised all the data included in the former two regulations. It provided that every baby should be vaccinated within the first year of its age, and revaccinated every five or seven years. The violation of this regulation was punished with a fine not less than 5 and not exceeding 50 sen (or approximately, from 2½ to 25 cents in U. S. currency). It was in the same year, just after the enactment of these regulations, that the great epidemic broke out which is mentioned above. This regulation remained unchanged during twenty-four years; a new revision took effect in the year 1909. This new law provides that each new-born baby shall be vaccinated within ninety days after birth and before June of the next year. Revaccination shall be made at the tenth year from birth (including the year in which the child was born). If either the primary or the secondary vaccination is unsuccessful, the child shall be revaccinated before December of the next year.

Formerly Japan, as well as every other country, used humanized lymph only. The retrovaccine was then used from 1892 till 1900. In 1900 the present "pure animal lymph" was substituted. While humanized lymph was used, the original vaccine was supplied from the vaccinating stations. In 1874 the Japanese government established a calf-lymph farm, in order to meet the demands of the general public. In 1888 the preparation of calf-lymph was entrusted to the Japan Health Association, which continued to prepare the lymph for eight years. During these years, other private institutions made their appearance which prepared calf-lymph for pecuniary considerations. The products of these private enterprises were unsatisfactory, for the efficacy of such lymph eventually became questionable and at last public opinion was aroused to establish a national institution for the preparation of calf-lymph, and in 1896 such an institution was established. In this institution Dr. Umeno tried the experiment of preparing a "pure animal lymph" by passing the virus only through the calf, never using a human body as had been done previously. He succeeded in this experiment, and since 1900 this kind of calf-lymph has been supplied to the public. The original calf-lymph farm was closed in the year 1906, and the calf-lymph is now prepared in the Institute for Research on Infectious Diseases.

II. THE CAUSES OF THE EPIDEMICS OF SMALL-POX IN JAPAN

Ever since the promulgation of the first vaccination law in 1874, and that of the second one in 1876, when compulsory measures were first adopted, Japan has suffered from epidemics from time to time. The inefficacy of vaccination might therefore seem to be proved to shallow-minded observers, who do not fully realize the complicated nature of the origin of small-pox as well as of other infectious diseases. These various causes should be thoroughly examined before the reliability of vaccination is questioned. Let us now, therefore, review the epidemiology of small-pox in Japan.

There seem to be at least five principal causes to account for the presence and continuance of small-pox:

1. The Importation of the Virus.—Japan is surrounded by seas, beyond which lie several countries where preventive measures have never been taken. In these countries, small-pox exists continuously and at every possible opportunity invades Japan. When we had only a limited means of communication some centuries ago, each epidemic could be traced back to importation of the virus from China through Corea, and in course of time the more the facilities of communication were augmented the more the country was found to be liable to infection. This compelled us to establish quarantine stations, which were opened in 1899. Since that date, and until the end of 1909, the number of detected cases of small-pox at these stations amounted to seventy-one, as is shown in Table 1:

TABLE 1.—NUMBER OF CASES OF SMALL-POX DETECTED AT QUARANTINE STATIONS DURING THE YEARS FROM 1899 TO 1909

Quarantine Station	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	
Yokohama	1	3	.	.	1	.	1	2	3	5	.	—16
Kobe	1	1	1	.	1	3	7	2	1	7	2	—26
Moji	.	1	.	.	.	5	4	.	1	6	2	—19
Nagasaki	1	.	2	1	.	1	.	1	3	1	.	—10
Total	3	5	3	1	2	9	12	5	8	19	4	—71

These figures, of course, exclude by necessity those who passed the stations in the stage of incubation, which obviously made the prevention of the disease most difficult. The same difficulty is encountered in the most completely vaccinated country — Germany — which is bounded on one side by Russia, a non-vaccinated country. This is why there exist a few unavoidable cases of small-pox annually in that country. Imagine, then, how great is the chance of infection in Japan, which is in close proximity to China and Corea, whose condition of national health hardly admits even any comparison with that of Russia. This is one of the most conspicuous causative factors in the reappearance of small-pox in Japan. Japan is therefore never tired of preaching the gospel of vaccination, not only within her own dominions, but also as far as her sphere of influence permits.

2. Non-Vaccinated People.—Laws cannot be expected to be all-powerful. Wherever there is a law, there are also to be met not a few law-breakers, even when the breach is met with severe penalties. It admits of no doubt that such laws as regulate matters of public health provide but slight penalties, and consequently there are not a few law-breakers among the ignorant mass of people. This fact will appear when we come to examine the figures given in our statistics, which equal nearly the whole population of the country. But the more minute particulars, which are not shown in the statistics, will clearly show the vague notion we have of the number of non-vaccinated individuals there are scattered throughout the country. Among the 10,600 persons with small-pox reported during the five years including 1878-1882, non-vaccinated individuals were found to amount to 63 per cent., or 6,690. Then again, during the latest epidemic, in the years 1907-1908, 1,527 non-vaccinated persons among 5,215 small-pox patients were found in one prefecture, i. e., in Hiogo.

Such law-breakers probably will be found in any nation where a vaccination law is enacted. The middle and higher classes of Japanese people never allow their children to go unvaccinated, but the lower classes, who constitute the majority of the nation, often neglect their duty. They are, like kerosene oil in a house where a fire breaks out, fuel for the flames, furnishing every possible chance for the spread of the disease. Under the revised vaccination law taking effect in the year 1909, the hitherto irresponsible protectors of children were subjected to penalties for failure to have them vaccinated.

3. Unsuccessful Vaccination.—The protection of the individual against small-pox is never complete unless the points of inoculation develop the typical pustules, and the patient undergoes a regular symptomatic change. In order to bring about complete immunization in a human body, the quality of the vaccine lymph and the technic of vaccination must be considered.

In Japan, from the first year of the enactment of the vaccination law in 1887 up to 1907, covering twenty-two years, the reported number of vaccinations was 97,355,246, of which 73,259,278 were compulsory and the remaining 24,355,968 voluntary. The average number of vaccinations per year was more than 4,420,000. Comparing this number with the whole Japanese population, there seems to be no one who has not been vaccinated; but a close examination of the real state of affairs will make clear the fact that in the above-mentioned large number of vaccinations are a certain number of unsuccessful vaccinations. Of course this large number of unsuccessfully vaccinated persons may also comprise some who have already acquired immunity by previous vaccination. At the same time we must not overlook those who have been unsuccessfully vaccinated because of unskilful manipulation on the part of the physicians, who had practiced the puncturing system instead of the cutting method, even when the lymph had been changed for the retrovaccine and this again for the "pure animal lymph." The effect of this may be seen from the statistics, which show a great difference between the percentage of the primary vaccinations gathered from the eight years before 1891 and after 1892. In the first eight years when the humanized lymph had been used the percentage of successful vaccinations was high, ranging from 85 to 90 per cent., but in the later eight years when the retrovaccine was introduced the percentage fell suddenly to 75 or 80. The figure, however, has been greatly increasing since 1900, when it reached as high as 88 per cent.

In short, it must be acknowledged that vaccination in Japan is so irregular that while there are some who receive no vaccination until five or six years of age, others have been vaccinated three or more times during the same period of time, and the consequence is the comparatively less number of genuine vaccinations. This evil will be overcome by the adoption of the latest radical policy.

4. The Immunity Acquired Through Vaccination.—Immunity through vaccination is not complete before three weeks after successful vaccination. This is why there are some cases of small-pox immediately following vaccination. Then again, the immunity is gradually weakened by the course of years. This fact may be seen from the following statistics:

Successful revaccination after—

1 year	13.6 per cent.	4 years	57.3 per cent.
2 years	32.9 per cent.	5 years	51.1 per cent.
3 years	46.6 per cent.	6 years	63.8 per cent.

This shows the percentage among the 951 cases observed in Japan.

7 years	72.5 per cent.	9 years	85.0 per cent.
8 years	80.0 per cent.	10 years	88.6 per cent.

These results were obtained by Weil in the year 1899.

The government report of the German Confederacy shows 91 to 93 per cent. of successful revaccinations after ten years from the primary. In other words, the immunity acquired through vaccination begins to disappear from the second year and by the tenth year it disappears almost completely. And therefore in Germany, and in some other countries, a law has been enacted to have the people revaccinated at the eleventh year from the primary vaccination.

The general statistics do not give these minute facts in detail, and therefore the deduction is imperfect. Had not the critics excluded these cases from the total revaccinated ones, they could not come to the conclusion which Dr. Hodge reached. For instance, during the latest epidemic in Japan, which broke out in 1907-1908, 608 patients were admitted into the Higashiyama Hospital in Kobe; 267 of the number were non-vaccinated, the past history of thirty-eight was uncertain as to the vaccination, twenty-five had contracted the disease within three weeks after vaccination, four had had small-pox previously, nineteen contracted the disease within five years and 225 over five years from the last vaccination. This shows also how far the immunity is impaired by the lapse of time.

5. Virulency of Small-Pox.—The virulency of small-pox is not constant in each epidemic. The higher the virulency of small-pox rises, the larger the number of cases among those who have passed several years from the last vaccination. Then, it may be asked, how can the virulency of small-pox be estimated? The simplest

way, it seems to me, is to estimate the death-rate among the non-vaccinated patients. The average death-rate of small-pox is estimated at from 20 to 40 per cent. in the European literature. In Japan, it shows a higher standard, ranging from 25 to 30 per cent. even during the small epidemics. During the epidemic of 1896-1897 it averaged 55.08 per cent., and that of the years 1907-1908 reached the high standard of 69.4 per cent. When the virulency reaches this high point, higher than has been encountered in European or American epidemics, even individuals previously attacked, as well as those vaccinated, contract the disease. During the latest epidemic, such cases were numbered at 242 in seven prefectures, viz., Hiogo, Osaka, Tokyo, Kanagawa, Hiroshima, Aichi and Wakayama, and fifty-seven died. The death-rate, therefore, was 23.5 per cent. This is unmistakable evidence of the strong virulency of the small-pox which prevailed at that time. It is like a devastating fire which consumes everything in its path and to which nothing is fire-proof. Japan dreads this kind of small-pox, which is also abetted by the other circumstances, but its direct results are by no means due to the inefficacy of vaccination.

III. THE EFFICACY OF VACCINATION

The efficacy of vaccination can be demonstrated by experiment, experience and statistics.

1. The fact that vaccinated individuals do not contract small-pox was made clear by Woodylle, William and others immediately after Jenner's experiment, by inoculating the virus of small-pox into the vaccinated individual. In modern times the same experiment has been made, of course for different purposes, with monkeys. Brinkerhoff and Magrath before the year 1904, and Dr. Miyajima, one of my assistants, in 1908 vaccinated a large number of monkeys with calf-lymph, and then inoculated them with the virus of small-pox, but none of the experimental animals contracted the disease. This is an established fact in science, and there is none who can deny it.

2. Empirical testimony can be best drawn from the great epidemics, in which a great many persons engage in transporting, nursing, inspecting and disposing of both the sick and the dead without the least apprehension, because every one of them has received a thorough vaccination. In Japan, those who engage in this kind of work are vaccinated regularly within a certain period of time, and the consequence has been that none of them fell a victim to the pestilence. If, on the contrary, they had never been vaccinated, the result would be nothing but disastrous. If vaccination had no preventive effect on small-pox, they would have fallen victims before anybody else. If, then, the results had occurred just the reverse to the real state of things as claimed by the Jennerists, they should have abandoned their claims a long time ago. But the general public outside the profession is well convinced of the efficacy of vaccination simply because of this empirical testimony, which constitutes an indisputable fact.

3. Statistical facts also bear witness to the efficacy of vaccination. But tables and diagrams shown in statistics do not explain themselves. The most minute and scrupulous examination as to the hidden meaning of them, which only can breathe into the dry framework of figures the spirit of truth, is necessary, so that fallacy may be avoided. In almost every civilized country where there is a perfect system of vaccination in vogue, there occur no great epidemics of small-pox, and consequently the death-rate among them is very low. If an epidemic should occur, it would soon yield to vaccination.

Unfortunately, in Japan we are still having occasional epidemics of small-pox, which constitute for certain fanatic superficial observers a sad example of the inefficacy of vaccination. We have ample reason to believe, however, that the very things which Dr. Hodge and other antivaccinationists hold as evidence against Jennerism are the solid rocks on which the statistical proof of the efficacy of vaccination rests.

In the first place, in proportion as the system of vaccination had been perfected, the period of each epidemic and the number of deaths are diminished. This fact may be seen from Table 2:

TABLE 2.—NUMBER OF CASES, DEATHS AND DEATH-RATE PER HUNDRED IN VARIOUS EPIDEMICS

	Cases	Deaths	Death-Rate per 100
First Epidemic			
1885	12,759	3,329	26.09
1886	73,337	18,676	25.47
1887	39,779	9,967	25.06
Total	125,315	31,962	
Second Epidemic			
1892	33,779	8,409	24.89
1893	41,898	11,852	28.29
1894	12,418	3,342	26.91
Total	88,095	23,603	
Third Epidemic			
1896	10,704	3,388	31.65
1897	41,946	12,276	29.27
Total	52,650	15,664	
Fourth Epidemic			
1907	1,034	437	42.25
1908	18,067	5,836	32.32
Total	19,101	6,273	

The first and the second epidemics each lasted fully three years, and the third two years, while the fourth broke out in December, 1907, and ceased completely in August of the following year, covering a period of less than a year. The number of cases again shows a gradual decrease. While the first epidemic had over 100,000 cases, the second had 80,000 and the third 50,000, the fourth had less than 20,000.

The marvelous effect of vaccination on the epidemics of small-pox is manifested in Table 3, which shows the sudden fall in new cases during the epidemic, which otherwise would have increased. The table does not show the long list of the vaccinated persons, but from the beginning of the epidemic down to the close a special vaccination was enforced on all persons who were brought under the control of the hygienic police power.

TABLE 3.—MONTHLY REPORT OF SMALLPOX DURING THE YEARS 1907 AND 1908

	Cases	Deaths
August, 1907	4	2
September, 1907	1	0
October, 1907	25	6
November, 1907	90	31
December, 1907	770	383
January, 1908	4,481	1,394
February, 1908	5,424	1,498
March, 1908	4,685	1,461
April, 1908	1,815	895
May, 1908	926	314
June, 1908	526	185
July, 1908	121	73
August, 1908	36	28

During this epidemic a striking effect of vaccination in mitigating the virulency of small-pox was experienced.

While it prevailed in Hiogo and Osaka, special compulsory vaccination was enforced, and consequently in Kanagawa, Tokyo, Aichi and Kyoto it prevailed less furiously, as is shown in Table 4:

TABLE 4.—RESULTS OF COMPULSORY VACCINATION

Place and Date First Case Appeared	Cases	Deaths	Death-Rate, Per Cent.
Hiogo, August, 1907	5,215	2,315	44.4
Osaka, November, 1907	3,431	1,641	47.9
Kanagawa, December, 1907	684	209	30.5
Tokyo, January, 1908	1,479	379	26.8
Aichi, January, 1908	800	169	21.1
Kyoto, December, 1907	263	38	14.4

The drop in the figures in cases and deaths could never have been so great had it not been for the effect of vaccination.

6. The death-rate in small-pox is given as about 30 per cent. by authorities, but it shows a wide range of figures in various epidemics, just as we see in any other infectious disease. Again, the comparison between the death-rate of small-pox among vaccinated persons and non-vaccinated ones cannot be established unless the data be collected from only one locality in the course of one epidemic. In Japan we have rare statistics which show such comparison. They cover five years from 1878 to 1882. The total number of cases during that time amounted to 10,600, of which number the following figures are given:

	Cases	Deaths	Death-Rate per 100
Non-vaccinated	6,690	2,190	32.73
Vaccinated	3,910	455	11.63

From the above figures it will be seen that the mortality among the vaccinated persons was not more than one-third of that among the non-vaccinated.

The following figures show the same conditions, where clear distinction could be made between the vaccinated and non-vaccinated, in Tokyo, Kyoto, Osaka, Hiogo, Kanagawa and Aichi, where during the latest epidemic the cases numbered 10,286:

	Cases	Deaths	Death-Rate per 100
Non-vaccinated	2,932	2,031	69.3
Vaccinated	7,254	1,926	26.6

The above figures show the decrease in the death-rate among the vaccinated persons to one-half that of the non-vaccinated ones.

The vaccinated persons in the above table include those who were vaccinated within three weeks from the time of exposure and those who had passed the time assigned as the infective period. If these cases be deducted from the number the result would be more accurate.

During the epidemic of 1907-1908, the first case appeared in Kobe City and the disease prevailed most severely there. The Higashiyama Hospital at Kobe admitted 608 patients in all, who may be classified as in Table 5:

TABLE 5.—CASES IN HIGASHIYAMA HOSPITAL

Class	Cases	Deaths	Death-Rate per 100
Non-vaccinated persons	267	134	50.19
Uncertain	38	6	15.79
Vaccinated	274	19	6.90
Within five years	19	0	0
Over five years	255	19	7.84
Vaccinated during incubation period	25	3	12.00
Having previous attack	4	0	0
Total	608	159	26.15

From this table it will be clear that the death-rate among the non-vaccinated persons was 50 per cent., while that of the vaccinated was 6.44 per cent., i. e., one-seventh that among the non-vaccinated. Again, all the deaths among the vaccinated persons occurred exclusively among those who had passed over five years from the last vaccination and among those who had been vaccinated during the incubation period. No one will doubt the efficacy of our Japanese vaccination, now that such a clear table of statistics is produced. Besides, the table shows that even among those who were vaccinated during the incubation period, the death-rate was four times smaller than that of the non-vaccinated ones.

7. There is, besides the above statistics, the following circumstance which constitutes still another strong piece of evidence. I refer to the statistics of our army during the two great wars, the Chino-Japanese and the Russo-Japanese. Our army engaged in both wars in Corea and Manchuria, where small-pox is endemic, and therefore the soldiers were constantly exposed to the danger of contamination; the more so when the unhealthy way of living which is a necessary concomitant of war is taken into account. However, the Japanese authorities took care to have every soldier who went to the seat of war vaccinated, and the happy result was that in an army consisting of not less than a million of men, the following small number of cases of small-pox appeared:

Chino-Jap. war: 155 cases; 34 deaths; death-rate, 21.93 per cent.
Russo-Jap. war: 362 cases; 35 deaths; death-rate, 9.66 per cent.

As the total number of men engaged in both wars is not yet made known, the rate of contamination and the death-rate cannot be accurately stated; however, we get from these approximate figures some notion as to the paucity of cases. The results are equal to, if not better than, those of the Prussian army during the war of 1870.

CONCLUSION

Japan is surrounded by non-vaccinated countries, whence contagion may flow in at any time, while the ignorant people do not care to receive vaccination; those who neglect it are therefore predisposed to be infected at the slightest chance. The enormous number of vaccinated individuals which appears in our statistics does not include all the people who should be vaccinated, but it does include a large number of persons revaccinated at an earlier time than the law of immunity requires, because they are well aware of the efficacy of vaccination as well as very anxious to protect themselves from the dangerous contagion.

From these various causes, there still prevail epidemics of small-pox in Japan. I regret that these statistics presented by our Japanese government have seemed to afford data for upholding the theory of the antivaccinationists in America. Every civilized individual of Japan knows the benefit of the marvelous discovery of Jenner, because he sees from time to time how he himself and his neighbors are protected from horrible epidemics. It seems to me that the presence of such an antivaccinationist as Dr. Hodge, who denies the efficacy of vaccination so frankly in the United States of America, is a striking witness to the fact that the people of America are already well protected by not having had the sad experience of an attack of small-pox for a long time, and by the fact that their neighbors are being thoroughly vaccinated. The antivaccinationists are like those who would deny the benefit of sunshine. It gives them every kind of joy and happiness, and yet they are so familiar with it that they are not aware of its good. They would come to know the vast protective power of vaccination, had they once experienced the terrible outbreaks of small-pox in their communities, in which thousands on thousands fall victims while the vaccinated ones go freely through the epidemic without the least danger of contagion.

STANDARDS AND AUTHORITY *

GEORGE EDGAR VINCENT

Dean of the Faculties of Arts, Literature and Science, University of Chicago; President-Elect, University of Minnesota

CHICAGO

"Monarchy," said Fisher Ames, "is like a merchantman; it sails well, but sometimes strikes a rock and goes to the bottom; democracy is like a raft; it never sinks, but your feet are always in the water." Thus with homely piquancy the Revolutionary sage set forth the conflict between the efficient élite and the unspecialized many. These contrasted views persist. In every institution, community, nation, these problems will not down: How shall the knowledge, experience, skill of the few be put at the service of all? If need be, how shall this wisdom be made coercive? How shall richer resources of science and technic be discovered and applied? With the change from country-side to city, from household to factory industry, from infrequent journeys to shuttle-like travel, from local to world markets, the problems of industry, commerce, health and politics become complicated and insistent. The horse-sense of a few decades ago will no longer serve an age of motor cars. The expert few are coming into their own. They assert superior knowledge and skill; they ask that these be recognized; they demand protection against sciolist, incompetent and quack. They seek to establish tests of individual training and efficiency for the few and to prescribe forms of conduct for the many. Thus fundamental questions are raised—questions of standards and of authority.

Plato in the "Republic" recognized these problems and provided for their solution. His "Republic" was an aristocracy of experts, an oligarchy of scientists. These guardians were highly trained, devoted to the common welfare. They could not transmit authority or privilege; they recruited their ranks from every social stratum in which they found ability. They were clothed with unquestioned power. They redistributed wealth, transferred children to the classes to which their aptitudes assigned them, censored literature and the drama—in short they made all decisions and imposed these on the mass of citizens. Plato assumed that truth could be discovered, that men could be trained to apply it and enforce it for the common good. Accurate science, a competent élite, and coercive power are to-day, as in Plato's time, conditions of adjustment to the life conditions of any social group, be it corporation, institution, community, state or nation.

Auguste Comte believed that authority ought to come from agreement; not agreement from authority. He had faith that with popular scientific education, "intellectual anarchy" would gradually disappear. Men would cease to explain phenomena by theological notions and metaphysical superstitions. They would, by the very constitution of their minds, be forced to agree, first, about mathematical relationships, then about celestial mechanics, next about physics and chemistry, finally about biology and social science. With the few something like this has come to pass. About most questions of the exact sciences educated men cannot differ. Discussion tends to take refuge in the fields of biology, psychology, philosophy and the social sciences. Even here science is steadily making conquests and robbing the intelligent of subjects for debate. But in another sense Comte's dream seems almost pathetic in its futility. The idea of the many accepting scientific knowledge from an appreciation of its validity and conforming their conduct to its demands, is still rather utopian. There are many who take a cynical view of popular education. They see medieval ignorance invading the twentieth century. Charlatanism, quackery and superstition run riot. Vagaries and absurdities sweep through a credulous public. Even they who have hope of making headway with scientific truth are not overconfident. "Against such education" writes one of these, "are naturally trained all the resources of quackery whose trade would be gone. And when free expression is accorded all alike, progress must be made in the teeth of ignorance too dense to have any conception of its own depth, and in the face of brawling charlatanry and screaming fanaticism."[1] In a sense, scientific knowledge and technic must always be a monopoly of the trained, efficient few. At any rate the participation of the many in this knowledge must be of a very different kind. To speak of modern science as a common possession of a whole population is misleading. The growth of science means specialization, and that means an élite. The degree to which the many appreciate the methods and spirit of science and recognize expert authority is a measure of popular intelligence.

There are professions and occupations that must be thought of as forms of social service rather than as personal careers. Thus doctors are rightly regarded as social servants. Their skill and fidelity are obviously vital to the community. Yet this view is far from universal. Individuals by tens of thousands see in a medical career chiefly a means of livelihood. They resent the rising standards of medical education as obstacles to the early enjoyment of an income. Many of these individualists resort to short-cut schools and to least resistance states. But these outcasts are embittered by exclusion from prestige and practice; they swell the ranks of the quacks and unfurl the black flag of the medical privateer. The discredited schools and "diploma-mills" also insist on the old dogmas of liberty and *laissez faire*, and make appeals to the traditions of the fathers, the spirit of '76 and other quaintly irrelevant ideas and shibboleths. Then, too, curious cults, recrudescent superstitions, attractive half-truths, esoteric mysteries are constantly arising to demand in the name of religion, free thought, or psychology, recognition as therapeutic agencies. To the influences which resist the standardizing of medical education may be added makers of proprietary remedies whose success varies directly with the credulity of the public. But in spite of impatient selfishness, mental inertia, sincere fanaticism, unscrupulous greed, the standardizing of medical education goes steadily, if too slowly, on. The Association under whose auspices we meet affords an example of that extra-legal centralized organization which creates national institutions amid what often seems a chaos of state particularism. Slowly but inevitably we are selecting a medical élite, experts to whom we entrust a constantly growing body of scientific knowledge and an elaborated technic.

It is essential that such an élite should be recruited from the widest area of possible ability. Society must provide a "drag-net" for special capacity. There is danger that the raising of standards may limit the field of choice to those groups which can afford the cost of long and expensive preparation. Socially and profes-

* Read before the Conference of the American Medical Association on Medical Education and Medical Legislation, Chicago, March 1-3, 1911.

1. Hodges: Pop. Sc. Monthly, xlix, 6167.

sionally such a result would be deplorable. If the community for its own protection insists on testing and training its social functionaries, it must provide a way of finding and encouraging unusual ability however this may be circumstanced. A system of scholarships, awarded by competent authority, after adequate tests, and continued only so long as the scholars' work justifies the support, would seem to be a socially necessary consequence of the increased demands of medical education. Medical associations, individuals, institutions and the states should all have a share in creating such a system.

So far medical men have been spoken of as one body. It is worth while to mention here the subdivision of the group into the teachers of medicine, practitioners and sanitarians. These sub-groups overlap somewhat, but on the whole they differentiate themselves rather clearly. Medical teachers may be further divided into those who investigate and those who give instruction. It is of prime importance that all these groups should work in closest harmony and loyalty. Their task is in a large sense common to all. Each group for its own highest efficiency must keep itself informed of the work the others are doing.

Granted that a body of medical experts is in existence, that the recruiting of this body is being more carefully supervised, that it is being gradually protected against the worst forms of competition, and granted, further, that this élite is able to formulate policies to protect individual and public health, how bring about the acceptance of these policies by the community? An enlightened despotism could impose such regulations on humble and submissive subjects. Model industrial villages have at times afforded modern instances of sanitation by ukase. One can imagine Peter the Great bringing things to pass quickly in Petersburg when once he had been convinced of the germ theory of disease. Experts have a kindly feeling for despotism. They know what ought to be done and they are impatient of delay. They often display a trace of autocracy when they have a situation in hand. A bureaucratic system under which the masses transfer to a body of government officials much of the deference once shown to the nobility, may display, as in Germany, or even in Switzerland, a high degree of efficiency. Under a régime which places the center of the franchise high up in the social scale, gives a thorough system of elementary and technical education, passes its male population through a rigorous military machine, exalts technical skill and scientific knowledge, there is a remarkable yielding to expert guidance. No wonder that the medical élite turn their eyes enviously toward Berlin where the details of conduct are rigorously enforced. But there is a vast difference between the down-trodden victims of a scientific paternalism and the untrammelled citizens of triumphant democracy. A German must keep the soles of both feet on the floor of a tram car, but the free-born American may extend his boot to be polished by every passing skirt, and in the State of Alabama is protected by at least one court in asserting his inalienable right to copious and casual expectoration.[2] Obviously the central problem in democracy is to give prestige and authority to the élite and to their prescriptions.

While rising democracies like those of France and England preserve traces of traditional deference to the upper classes, the American people show no such attitude. On the contrary, they usually display hostility, or at least derisive disrespect, for the specialized and their opinions. To the unspecialized average man the expert is in a way a personal affront. He suggests the idea of a superior class, and seems to reflect on the competence of the ordinary citizen. This feeling is a natural survival from the early days, especially on the frontier. The problems of that simple life demanded not highly trained specialists, but men who could turn their hands to many different kinds of work, none of which was searchingly tested by competition or other spur to efficiency. Slowly, grudgingly the technical expert, the railway and mining engineer, the architect, of late the agricultural specialist, have been given recognition by the many. But against doctors, especially experts in insanity, sanitarians, university professors, and others who arrogate to themselves special knowledge that is not easily tested in tangible, material ways, the American democracy still directs a large measure of incredulity and derision. And this, too, in spite of constant resort to physicians and personal confidence in them in individual cases. It is the difference between "my doctor" and "the doctors." Then, too, for obvious reasons the antagonism is much more marked toward bacteriologists and sanitarians than toward physicians in private practice.

There are other causes of popular distrust of the specialized few. The public attributes to them motives of cupidity and of class interest. Such a phrase as the "Doctors' Trust" by its sinister suggestions is a clever device for appealing to this latent suspicion. Again, the traditional idea that it is derogatory to personal dignity to defer to superiors, the hypnotizing influence of cherished "inalienable rights," the tendency to identify opinionated obstinacy with personal liberty—all these curious confusions of ideas play some part in making the many hostile to the few. Universal schooling and access to newspapers, periodicals and books of popular science create in tens of thousands a sense of familiarity with the latest thought. They pick up phrases, they are the victims of verbal suggestion, they have the pride of opinion. They set their neighbors right about current questions and warn them against the selfish recommendations of the experts. One of these local oracles in stopping his subscription recently wrote the following lines to the *Outlook*:[3]

> I have carefully studied the vaccination question for several years, and am thoroughly conversant with the expressed views of many of the most prominent advocates and opponents of the practice in the world, and I assert, knowing absolutely that I cannot be intelligently and successfully contradicted, that there is now nowhere to be found a man of proven competency and well-established reputation for truth and probity, either in or out of the medical profession, who advocates vaccination.

The doctors are not blameless for a good deal of the popular prejudice. By a sometimes tactless assertion of superior knowledge they commit the unforgivable American sin of "setting themselves up to know more than other people." When a prominent medical man in testifying before a senatorial committee says: "My position is that of an expert whose testimony cannot be impeached," he is doubtless stating a fact, but to the average man the cool assertion is irritating. It arouses antagonism. Another cause of popular distrust of expert opinion and professional probity is the widespread belief that physicians and professors of medicine can be induced to give testimony on either side of a legal case. The public cannot enter into all the intricacies which

2. THE JOURNAL A. M. A., 1900, XXXV, 433.

3. Outlook, Feb. 11, 1911.

make possible honest disagreement between well-trained men. The easy inferences are that medicine is mere guess-work, or that doctors are hypocritical and venial. If the proposal to make medical experts an impartial special jury, summoned and paid by the court itself, can be carried out, there will be a gain for the prestige of the profession. It is to be hoped, too, that the conviction of the poor that they are regarded as mere clinical material for human vivisection may be gradually removed. This persistent misconception plays some part in the prejudice against medical men. Obviously the profession suffers seriously, not only from the quacks and charlatans without the pale, but from the self-seeking and disloyal who violate the spirit while they cleverly keep within the technical rules of the medical fraternity. By playing on the ignorance of patients, by prolonging the period of treatment, by prescribing futile remedies and advising unnecessary operations, by extortionate charges, these men do untold damage to the profession and furnish just grounds for popular distrust and resentment. The medical élite must have the vigilance and courage to protect itself, not only against enemies without, but against traitors within. Again, it is possible, with some show of truth, to charge the doctors with being slow to recognize new knowledge and better methods. There are extremists who insist that the profession has always opposed progress. The injustice of so sweeping an assertion does not prevent its having a certain effect on public opinion. The industrious incompetence of large numbers of practitioners who, graduated from preposterous schools and admitted to practice by ridiculous boards of examiners, run their devastating careers in some of our states, does not deceive all who know them. Even if the public is undiscriminating enough to put all doctors into one class, it is not wholly to be blamed for regarding the entire group with a good deal of suspicion and derision.

Thus the more or less expert few face the many who trust individuals, but are slow to recognize the authority of the profession. What are the possibilities of reaching a better understanding? The answers are obvious: The few must deserve and win popular confidence; the many must learn to appreciate the competence and devotion of the few. And the state must formulate and enforce the terms of this better understanding. If the cure for democracy is more democracy, the corrective of a little education is more education. The only alternative is a return to autocracy. To the millenium-chaser, the short-cut reformer and the efficient administrator, the slow process of education is an irritating suggestion. They object to having their "feet always in the water."

But scientific men should face facts as they are. The public mind is like a force of nature. It is childish to rail at it, to denounce it, to expect it to be docile about technical matters. Doctors should diagnose the public calmly and in the scientific spirit. They should try to trace the play of cause and effect, and then take measures to bring desired results to pass. In this they have the right to ask the cooperation of all thinking men and women. The public is controlled by leaders. These leaders must be informed and intelligent. Colleges and universities have a responsibility to train these leaders. Every institution of higher education should be a model of public sanitation and hygiene. Every graduate should be well grounded in the principles of personal and community health. The public schools could do much more than they are doing at present to train children in hygienic habits and in intelligent deference to sanitary regulations. Popular literature, lectures, parents' meetings, visiting nurses' associations, organizations like the antituberculosis societies, city and state health departments and boards—agencies of many kinds are all engaged in the work of popular health education. Would that Mr. Carnegie's next ten million dollar gift might be devoted to publishing in newspapers authoritative advertising bulletins on hygiene and sanitation! Many an editor would be glad to be freed from irksome slavery to the patent medicine men.

A large responsibility for the education of the public must fall on members of the medical profession. Doctors and professors of medicine must devote some time to public addresses, to cooperation with public school authorities, to participation in local movements for improved sanitation, to hearty support of local health authorities when these are reasonably competent, and to civic movements designed to improve a defective public health service.

There is much platitudinous talk about legislation and public opinion. On the one hand are the doctrinaires whose one idea of social progress is to get some law passed. At the other extreme are to be found those who are so convinced that law unsupported by public opinion is futile, that they are in danger of neglecting legislative aid. As a matter of fact, oftentimes agitation for legislation is in itself a valuable means of public enlightenment. In any event the gains in public opinion should always be fixed as soon as possible in well-drawn laws. Movements, therefore, for legislation affecting medical education, admission to the practice of the profession, the organization of health boards, the enactment of sanitary regulations, etc., should all be regarded as a part of the process by which the expert few and the many are to be brought into relations of mutual respect and good will.

But it remains true that in a democracy, back of the coercive power of the law there lies the social authority which in the long run is vested in the few who by their approved competence and by their spirit of social service command the confidence and respect of the public. With increasing intelligence the many learn to protect themselves against quackery and to place confidence in tested leadership. If the raft of democracy cannot be transformed into a swiftly sailing ship, there is hope, at least, that it may be built up far enough above the waves to carry its passengers dry-shod.

PELLAGRA TREATED WITH SALVARSAN (606)

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In the light of early and material improvement of symptoms in three typical cases of pellagra following the administration of salvarsan, it has appeared wise to make this preliminary report. The final results, deductions, photographs and later cases will be embodied in a future report.

CASE 1.—*History.*—W. H. R., aged 43, white, is an electrical engineer. The patient's family history is negative, except that one sister died some years ago of tuberculosis. The patient had malaria and rheumatic arthritis in youth. Since, he has enjoyed good health until the present condition began. About the middle of January, 1911, the patient was suddenly seized with cramping pains in his abdomen, followed by a profuse and weakening diarrhea. This persisted and did not yield to treatment. Some days later he noticed that his hands were burned to the elbows, which he attributed to hot

oil. No similar burn ever occurred, though his work had remained the same. There was also a burn on his thigh, due "to a rent in his trousers." The patient was nervous and cried over small matters. His mouth became sore and he lost weight rapidly. He was confined to bed six weeks.

Examination.—March 4, 1911. The patient was about 5 feet, 7 inches tall, was greatly emaciated and weighed 100 pounds. His expression was dull and he answered questions sluggishly, Pupillary reflexes were normal; tongue red, moist and patchy; lungs were negative; liver two inches below costal margin; abdomen tender; patellar reflex exaggerated. There was a brownish indurated lesion of the skin over the hands and thick crusting over the points of the elbows. The intermediate forearms were pigmented, with paler areas of desquamation. There was also a large encrusted area on the inside of the thigh and the feet were somewhat involved. The urine contained albumin and a few granular casts. The blood showed 6,000 whites, 3,225,000 reds, 70 per cent. hemoglobin. The stools were six to eight a day, foul, containing macroscopic blood. There were no amebas, hook-worms or other important findings. Von Pirquet and Wassermann tests were negative. The pulse was 108 to 116; temperature slightly subnormal.

Treatment and Course.—After observing the patient two days, and the case being a frank one, it was decided to administer salvarsan (606), which was done by the intravenous method in a 0.5 gm. dose on March 6. There was a rise of temperature to 99.2 F. that evening. Aside from being restless, there was no inconvenience. The following day, the patient said he was better; the bowels had moved only once in twenty-four hours.

March 8, the patient was sitting up in bed and said he was hungry; did not cry when spoken to and looked brighter.

March 9, pulse lowered to 96. The patient knew he felt better. The skin condition had materially faded. The legs showed only a brownish discoloration; exfoliation from the hands marked.

March 12, improvement continued; practically all local signs of the disease had disappeared.

March 15, patient was walking around the ward; had gained weight; said he felt fine and was very hungry. He went home and will return for observation.

CASES 2 and 3.—March 7 and 8, two female negroes, with well-marked pellagra and giving negative Wassermann reactions, were given, intravenously, 0.5 gm. and 0.6 gm. of salvarsan, respectively. An improvement was noted in forty-eight hours.

After a week had elapsed the skin lesions had changed materially as had the ptyalism, vaginitis, weight and mental symptoms. Both were eating heartily, the diarrhea had abated and constant improvement was recorded. There appears to be an early and real improvement with no untoward effects from the administration.

No internal medication was given until the reaction became negative, when strychnin and iron were given in tonic doses, three times a day. The patient has in no way suffered from the administration of arsenic. The case was apparently a very malignant one. It is possible that some lasting effect of the disease will continue to manifest itself owing to the destructive action of some hidden lesion, and since there are already numerous reports of recurrences after the use of salvarsan, it is not likely that the treatment in this case will completely eradicate the disease. In view of the fact, however, of the non-toxicity of sodium cacodylate, the simplicity of administration, and the rapidity with which it seems to arrest progressive lesions, it should be given whenever the proper administration of salvarsan cannot be carried out.

I hope to be able to report the future progress of this patient at a later date.

57 West Fifty-Eighth Street.

SODIUM CACODYLATE IN TERTIARY SYPHILIS

REPORT OF A CASE *

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NEW YORK

As comparatively few cases of tertiary syphilis treated with sodium cacodylate have been reported, and as widespread interest has been awakened in the treatment of syphilis with arsenical compounds by Ehrlich's new discovery, I wish to report the following case:

History.—J. L., aged 27, presented himself for examination and treatment at the Manhattan Eye and Ear Hospital Sept. 28, 1910, complaining of faucial irritation, for which he sought relief. He was referred to the throat department, where he was examined, and the following history obtained: About June 15 an indurated sore developed on the glans penis just back of the corona, followed in a few days by other sores on the body of the penis. Four weeks later there developed the eruption, followed by the faucial irritation from which he sought relief.

Examination.—The posterior pharyngeal wall was found ulcerated with two or three deep-seated ulcers on the bucal mucous membrane. The skin over the body showed numerous large and small rupial ulcers in various stages of development and necrosis. The patient stated positively that he had never had any other lesion previous to the one reported as occurring ten weeks previously.

Treatment.—A diagnosis of rupial syphilis was made with tertiary manifestations in the throat, and the patient put on bi-weekly injections of salicylate of mercury, together with suitable means for the relief of the local irritation.

Transfer to Eye Department.—After about four weeks' treatment the man was no better, and owing to the fact that a large rupia had developed on the right upper eyelid, with the possibility of its destruction, the patient was transferred to the eye department, where I first saw him on October 19. The diagnosis of rupial syphilis was confirmed by several of my colleagues, and in spite of the fact that the patient had had repeated injections of mercury, the Wassermann reaction was taken and found to be positive. The gumma in the lid was progressive.

Sodium Cacodylate Treatment.—The patient was put on daily injections of sodium cacodylate, ¾ grain to a dose. Within forty-eight hours the surface of the ulcer was smooth and healthy in appearance, the slough having been dissected away. At the end of one week the lid had entirely healed with very little deformity, considering the size of the slough. With the exception of two or three of the larger foci situated on subcutaneous bone surfaces near the skin and elbow, there was rapid cicatrization and healing of the ulcers. At the end of one week the injections were discontinued for a week, at the end of which time a second Wassermann test was negative. The treatment was then resumed in 1½ gr. doses daily for one week longer, after which the man received three injections weekly till November 21.

* Read before the Ophthalmological Section of the New York Academy of Medicine, Nov. 21, 1910

The Anesthetist.—An expert anesthetist is quick to note every change, and can so "nurse" his patient that it is seldom he has any anxiety from the appearance of untoward symptoms. These difficulties may turn up in the hands of the less experienced, who must at times give an anesthetic, and who must, therefore, get the most thorough training possible. No man can have confidence in his power to administer an anesthetic safely who has not a very clear idea as to what constitutes a danger signal and a definite knowledge of how to proceed instantly and without hesitation to get his patient into a safer condition.—W. Rankin, in the *Practitioner*.

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[*For other information see second page following reading matter*]

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MUSCULAR EFFICIENCY AND PAIN

One of the most interesting subjects of discussion in industry and manufactures which has arisen in recent years is the question of human efficiency. In the effort to increase the output in the various trades and crafts a special study of the movements required for various accomplishments has been made. It was shown, for instance, that a bricklayer at work stooped many times a day in order to pick up the bricks. In doing so, each time he stooped he had to support, under varying conditions, the weight of his body and to lift at least one-half of it to the erect posture. On the other hand, it was shown that a good deal of this crude labor with the consequent exhaustion of muscular energy, might be saved by having the bricks so placed that he could reach them without stooping, and that this might be accomplished by means of machinery or scaffoldings, and the employment of cheaper labor than that of the skilled workman. It was found that a man might lay in this way one and a half times as many bricks as he was able to lay by the old method with the expenditure of actually less energy than before. It would seem that this improvement in method, which saved useless movement and expenditure of muscular energy, would surely have been developed by the workman himself; but it was not, and only when a skilled engineer deliberately set himself to study the workman's movements in order to eliminate all those that were unnecessary, was it found how much time and muscle-energy could be saved.

The lesson is rather pertinent for the physician who has to deal with the working classes. It is often found that the source of pains and aches, which are worse on rainy days, and in damp weather generally, and which are therefore usually referred to as "rheumatism," are often the consequence of efforts to use muscles under bad mechanical conditions or in unfavorable circumstances, and then to use them much more than the result aimed at demands. As a consequence of this, in practically all occupations there are painful conditions. In the old days when dentists used foot-power engines, most of them acquired a distinct halt in their gait known to the profession, at least, as the "dentist's halt" or "gimp"; this halt occurred in the leg on which the dentist stood, while the other was used in developing the power. Workmen who are employed on foot-power lathes suffer in the same way, and the only relief for them is to change the foot applying the power, or to occupy a sitting position, from which they can use both feet.

Workmen who are employed at benches in various trades are likely to suffer from corresponding painful conditions of the arms as a consequence of faulty use of the arm muscles. Filers, for instance, who work long hours at filing, are almost sure to have severe aches and pains in their forearms, unless their benches are so low that they can apply from the shoulders whatever pressure is necessary. Men who use a hammer often suffer in the same way, unless care is taken that there is no lost movement or waste of energy in their work. Women who sweep often suffer much more on the right side from painful fatigue (worse on rainy days, and therefore regarded as "rheumatism") than would be the case if they alternated hands in the use of the broom, and changed from a broom to a brush occasionally in order to vary the muscular movements. There is scarcely a trade or occupation in which some of the supposedly inevitable occupation-aches and pains could not be greatly modified for the better by proper direction in the use of the muscles, and by variation in the methods of work. This would save much pain and discomfort and avoid the objectionable use of anodyne drugs. This is the physician's department in the improvement of human efficiency that is occupying so much attention at the present time.

THE FUNCTION OF THE THYMUS

Not least among the problems confronting the physiologic investigator is that presented by the thymus, that mysterious organ which, culminating in its development early in life, normally undergoes early involution and by its persistence not infrequently produces the sudden, so-called thymic death. Friedleben,[1] who attacked this problem as far back as 1858, by attempting to remove the organ from various animals, failed to demonstrate any appreciable physiologic alterations in the animals so treated. Unfortunately, his work was done before the development of aseptic methods and was complicated by infection; nor is it very probable that he succeeded in complete extirpation of the organ. Of the great amount of more recent work, that of Basch[2] stands out prominently, because of the positive results which he reported. Following removal of the thymus in puppies from three to four weeks old, he observed marked, though transient, osseous changes, setting in as early as from two to three weeks after the operation. These changes took the form of deficient ossification

1. Die Physiologie der Thymusdrüse in Gesundheit und Krankheit. Frankfurt, 1858.
2. Wien. klin. Wchnschr., 1903, xvi, 893; Ztschr. f. exper. Path. u. Therap., 1905-06, ii, 195; Jahrb. f. Kinderh., 1906, lxiv, 285, 1908, lxviii, 649.

with abnormal flexibility of the long bones, and with diminished resistance to fracture, the epiphyseal cartilage being thicker than normal, and at points of fracture there was transitorily deficient calcification of the callus. He obtained also marked nervous changes, the animals showing hyperirritability of the peripheral nerves, and less intelligence than the control animals from the same litter. Occasionally, also, they suffered from convulsive attacks which usually were fatal.

Recently Klose[3] has reported the results of a repetition of Basch's work, selecting, however, animals in the height of thymus activity, and not, like Basch's animals, in the period of involution of the organ. By working with puppies from ten to twenty days old, and by observing them over longer periods, he was able to obtain results even more striking than those of his predecessor. The alterations after removal of the organ could be divided with some readiness into several distinct phases. Following an initial latent phase of about two weeks, there came a period of from two to three months characterized by marked increase in adiposity, excessive eagerness for food, and diminished activity and muscular strength. Next came a period of rapid loss of weight, and of muscular and bony strength, although the animals still ate eagerly. Psychically they degenerated until they became practically idiotic. This stage lasted, in different animals, from three to fourteen months, and ended in death preceded by coma. A study of the bones made during the later stages showed marked osteoporosis, with multiple cysts in the spongy parts, and irregular and indefinite limitation of the compact portions. Also there was irregular thickening of the epiphyseal cartilages, and deficient linear growth. Along with these changes, there was a pronounced tendency to spontaneous fracture, followed as a rule by fibrous callus formation only. With the anatomic alterations in the bones there was a corresponding chemical change. While the bones of the control animals showed 65 per cent. of calcium salts, the animals operated on had only from 32 to 34 per cent. This diminution was at the expense of all the calcium salts alike, as the relations between the mineral constituents of normal bone were not altered. The brain also showed definite changes; it was relatively large, and markedly edematous. Klose believes that the changes can all be explained on the basis of an acidosis, acting on the bones by draining them of their lime salts, and acting on the nervous tissues by increasing their affinity for water. In view of the great content of nucleins in the thymus, he believes that nucleic acid may be specified as the offending agent, and regards the thymus as furnishing a site for the synthesis of the nucleins, with accompanying neutralization of the nucleic acid. That there would be an excessive nucleic acid metabolism at the time of greatest growth, corresponding with the period of thymus activity, is self-evident. From the fact that his experimental animals showed at first splenic hypertrophy with later degeneration, Klose concludes that it is the spleen which in later life, after the period of greatest stress, assumes the function of the thymus. Additional support for this view is afforded by the association of hypertrophy of the spleen and lymphoid tissues with that of the thymus in the "status lymphaticus," and by the fact, to which Rachford[4] calls attention, that on exposure of the thymus alone in this condition to the *x*-ray, the decrease in size of the thymus is accompanied by that of the other organs as well. Klose calls attention to the similarity between the osseous findings in his thymectomized animals and those in cases of human rickets and osteomalacia. While at this time no definite rôle can be assigned to the thymus in the production of these diseases, the analogy is too striking not to deserve attention, particularly with diseases of such obscure etiology.

As regards the "thymic death," the conditions shown by surgery seem to justify the conclusion that this is mainly mechanical in character, by pressure on the trachea or large vessels by the enlarged organ. Nevertheless, in view of the pronounced physiologic processes which his work appears to assign to the thymus, Klose believes it probable that altered functional activity plays at least some part in the causation of death. As accessory thymus tissue occurs in the human being in and around the thyroid, and as this is capable of rapid hypertrophy, the surgical extirpation of the organ in the human being in all probability seldom can evoke such results as occur in the dog.

3. Arch. f. Kinderh., 1910, lv, 1.

4. Tr. Assn. Am. Phys., 1910, xxv, 570.

INDUSTRIAL DISEASES

The State of Illinois has recently made an important contribution to the literature of industrial hygiene. About a year ago, the Illinois Commission on Occupational Diseases[1] began its work of investigation and the results of this investigation together with recommendations for the legal regulation of certain dangerous trades have been sent to the governor of the state.

We understand that though other states have made formal inquiry into industrial accidents, Illinois is the first to attempt a study of industrial diseases.

The commission had only about ten months in which to work and wisely decided to make an intensive study of one or two restricted fields, such as that of industrial

1. Report of Commission on Occupational Diseases, C. R. Henderson, secretary, University of Chicago. The commission consisted of the following persons: George Webster, M.D., president of the State Board of Health, chairman; Charles R. Henderson, University of Chicago, secretary; Ludvig Hektoen, M.D., Memorial Institute for Infectious Diseases; Walter S. Haines, M.D., Rush Medical College; W. H. Allport, M.D.; James Simpson, Marshall Field & Co.; and the following state officials: Chief Factory Inspector Edgar T. Davies, Secretary State Board of Health J. A. Egan, M.D.; Secretary Bureau of Labor Statistics David Ross.

The appropriation granted to the commission was expended almost entirely on the field work of investigation, office room being donated by the university and laboratory facilities by members of the commission. Twenty-one investigators were employed, including eleven physicians and ten laymen, the former taking up the hygiene of the different trades and the physical condition of the work-people, the latter investigating factories and examining records of hospitals, dispensaries and sick-benefit societies.

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poisons and of caisson disease, rather than to make a general survey of the whole subject. By choosing the poisonous trades rather than the dusty trades they were able to show clearly the causal connection between occupation and disease. The dusty trades are really the most important numerically considered, but the question of morbidity in these trades is always closely bound up with housing conditions, standard of living, etc., and the influence of the trade itself is less clearly demonstrable. In caisson disease we have a clearly marked trade disease.

The poisonous industries to which most study was devoted are the lead trades (Alice Hamilton), the brass and zinc trades (Emory R. Hayhurst) and the trades involving exposure to carbon monoxid (M. Karasek and G. Apfelbach), these being important industries in Illinois employing large numbers of workmen. In addition, there are short papers on arsenic, turpentine, the cyanids, hydrofluoric acid, nitrate of silver, metol, platinum, the chromates and chromic acid.

The report on the lead trades shows that this metal is used to an enormous extent in modern industry and that lead poisoning is probably in Illinois, as it has long been known to be in Europe, the most important industrial disease. The list of trades in which lead poisoning was found to have occurred numbers twenty-eight, but the classification of these trades is not very carefully made, and if industrial processes were counted instead, it is probable that the number would come not far from 120, which was Thomas Oliver's estimate of the number of processes in which lead is handled in Great Britain. Several trades are included in this list which the ordinary man does not think of as lead trades. For instance, the making of storage batteries is described as one of the most dangerous; in Europe, this trade is strictly regulated by law. The work of commercial artists is said to involve a fairly large amount of lead poisoning owing to careless methods of using the white paint which the artists suppose to be a harmless zinc white. Apparently physicians are sometimes led astray in their diagnosis of these cases, for their patients assure them that they have never been exposed to lead poisoning, although the investigators found that all but four of the seventy-four engraving establishments visited used white lead paint.

Other unfamiliar lead trades are the making of litho-transfers for pottery, the polishing of cut glass, making and hanging lead-colored wall-papers, enameling bath tubs, and laying electric cables. Five hundred and seventy-eight individual cases with six suspected cases are reported as having occurred in Illinois during the last three years in these twenty-eight trades, but it is stated that this figure represents only a fraction of the real number, for it was impossible to obtain even approximately accurate information as to any trade except the well-organized plumbers, and the partially organized printers and painters. The remaining lead workers are said to be composed largely of newly arrived foreigners "who enter on the work utterly ignorant of its dangers, or with only a vague, unintelligent dread." They are "a notoriously unsteady, shifting class," and "as it is only with a steady force of workmen that the oversusceptible can be weeded out and the others trained to protect themselves, it follows that this shifting of men from place to place is productive of far more poisoning than would occur among a permanent force of men." The investigators find that for the most part very little care is taken of the men employed in the dangerous lead-trades and statistics are given to demonstrate the contrast between European conditions and those in Illinois.

"In one English white lead factory employing 182 men, careful medical inspection failed to discover one case of lead poisoning in the year 1909-10. In an Illinois factory employing 142 men partial inspection revealed twenty-five men suffering from lead poisoning last year. In another English factory employing ninety men no case was discovered for five successive years. In an Illinois factory employing ninety-four men 28 per cent. of all employees have had lead poisoning and 40 per cent. of all employed in the dustier work."

Dr. Hayhurst's report on the brass industry includes a study of "brass-founders' ague," an industrial disease which has been the subject of much controversy in Europe, some authorities even denying that there is an affection peculiar to this trade. The description of symptoms given by Dr. Hayhurst is detailed and clear, but it would be more convincing had he given his personal observation of some one case. Probably the fact that the paper was written for a lay audience made him confine himself to more general statements. He agrees with the generally held opinion that the "ague" is caused by the sublimation products of zinc.

The brass industry in Illinois is apparently in as much need of hygienic regulation as the lead industries, for the prevention of brass-founders' ague seems to be simply a question of the proper removal of fumes. "In large foundries with good ventilation, either natural or artificial, brass chills practically never occur." But the investigators found that only four of the eighty-nine foundries visited could be classed as well-regulated and free from trade sickness, sixty-three were acknowledged to be centers of trade sickness and seven were suspected to be equally bad. Of 189 men from seventy-eight foundries who were examined by Dr. Hayhurst, 146 complained of some sickness traceable to their employment, forty-five had had "brass chills." As brass founders are also exposed to the action of arsenic, antimony, phosphorus, lead and the cyanids, brass ague is not the only industrial disease to which they are subject.

The newly employed men are said to be more susceptible to ague; the older men acquire a certain tolerance, but there is apparently a chronic form of poisoning which shows its effects on the lungs, digestive tract, kidneys and nervous system. Dr. Hayhurst's statistics as to longevity are almost startling. Of 1,761 foundry men, only seventeen were over 50 years of age.

The study of carbon monoxid poisoning is of great interest. Ample material was found in the great steel works of western Illinois where this gas is produced during the smelting of the iron ore with coke and lime. The symptoms of acute poisoning are much like those of ether narcosis, and if the sufferer is rescued in time an apparently complete recovery occurs. Drs. Karasek and Apfelbach undertook to determine the effect of frequent or constant exposure to smaller amounts of gas, chronic carbon monoxid poisoning. For this purpose they examined 240 steel workmen, and found them for the most part in poor physical health and with deficient muscular power, as indicated by the hand dynamometer. A careful control examination made of men of the same nationalities engaged in similar work, but not exposed to gas, showed that the gas workers had actually less muscular strength, a fact which "means a large economic loss in the numerous industries where workers are exposed to carbon monoxid."

Blood examinations of sixty-eight steel workers showed that "in practically all those exposed to blast gas there was a polycythemia numbering between 5,500,000 and 9,600,000. No embryonal or other unusual forms of red cells were present. Seemingly this is a conservative action on the part of the system whereby the harmful effects of the gas are mitigated and great toleration established."

The industrial hygienists of Europe are always reproaching us with our failure to collect data on industrial diseases in the United States. Let us hope that the report of the Illinois Commission will prove to be the first fruits of a widespread effort to make up for our former shortcomings in this respect.

THE NAME "EPINEPHRIN" VERSUS THE NAME "ADRENALIN"

There are thirty or more different brands of the blood-pressure-raising principle of the suprarenal gland on the market, five being in this country alone. These products are identical so far as their chief constituent is concerned; they differ, however as to the solvent and the preservative used. The processes of manufacture of some of them are patented; all of them are sold under trade names.

Until two years ago there was no common name applicable to this active principle; whenever reference was made to it a trade name had to be used. At that time the Council on Pharmacy and Chemistry, realizing the need of a generic term, adopted "epinephrin" as such a term. This name was selected in part because Abel had adopted it in 1899; in part because, so far as could be discovered, it was the name under which, through Abel's publications, the substance first appeared in medical literature; and in part because it seemed to be the only suitable one not already appropriated by some commercial firm.

After the publication of the Council's report, THE JOURNAL began gradually to use the term in those cases in which it seemed clear that the proprietary term was used in a generic sense. The substitution of the name "epinephrin" for "adrenalin" in the abstracts of certain foreign articles caused Parke, Davis & Co. to write a letter of protest which called forth the discussion appearing in the Propaganda Department of this issue.

The amount of space devoted to this matter may be criticized and considered unwarranted by those who do not realize the importance of the subject. The criticism is, to a certain degree, just. The somewhat inordinate length of the article is due in part to the unfortunate fact that, in availing themselves of the courtesy extended by THE JOURNAL, Parke, Davis & Co., in their reply, have injected into the discussion side-issues, such as the priority of discovery, the superiority of their product, etc., whereas, the question under discussion is simply that which relates to the name. It is, however, not altogether a matter for regret that the discussion has been thus broadened, for it brings before our readers many facts regarding the discovery of an important medicinal agent that are not generally known, at least by physicians.

Whether or not "adrenalin" is superior to "adrin," "suprarenalin," "suprarenin," "adnephrin," or to any other of the preparations is entirely immaterial in this connection. The point is that the active principle of the suprarenal gland is on the market under various trade names, and that a name common to all has been selected to be used when no particular brand is referred to. The fact that "adrenalin" is regarded by many, both here and abroad, as a common, generic name does not alter the fact that it is claimed as a trade name by a commercial house and, therefore, presumably at least, cannot be used except as such.

Among the facts brought out in this discussion, one stands out clearly: that Abel deserves as much credit for the discovery as any other man, if not more. Credit belongs to Takamine for making use of reactions which were already well known. His work was a step in the progress of knowledge of the substance, but it was a step which he could not have taken but for what others, Abel especially, had accomplished and published. Abel's magnificent work, covering several years, deserves as much credit, to say the least, as that of Takamine. And it should be kept in mind that the former worked in the interest of science, and published his results for the benefit of all. He had no hope of pecuniary reward, asked for none, and received none.

Let us repeat, however, that these are side issues; the question is simply that of name. It cannot be too strongly emphasized that "epinephrin" is a true scientific name for the active principle of the suprarenal gland, and that it should be used on all occasions when the active principle and not some particular firm's make is referred to.

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Current Comment

A FIFTH YEAR AS A HOSPITAL INTERN

Probably the next important advance in medical education will be the requirement of a fifth year to be spent by the student as an intern in some good hospital. In the majority of our better colleges even now most of the graduates are obtaining internships and it is claimed that there are more opportunities for such positions than the colleges are able to fill. It is also stated that the students who do not accept such internships, as a rule, are the very ones who should be required to take that work. Therefore, the requirement of the fifth year as a part of the course for the medical degree, in such institutions at least, could easily be brought about. In some states, however, where colleges have desired to make this additional requirement, they cannot do so because of the wording of the medical practice acts. In these states the law provides that only graduates of medical colleges may obtain licenses and that only licensed physicians can serve as interns in hospitals. Thus the colleges are unable to withhold the degree until after the fifth year is completed. A way out of this difficulty would be to secure an amendment to the medical practice act such as is being sought in Illinois. This amendment provides that the board in its discretion can admit to its examination a student who presents a certificate from a reputable medical college, showing that he has completed four years in medicine and has passed the examinations of that college. If it should be considered necessary or advisable, the state board could issue a limited license authorizing him to practice medicine and surgery in a hospital, this limited license to remain in effect for a period not exceeding eighteen months and to be exchanged for the permanent license as soon as the student has completed his internship and obtained his M.D. degree. Surely, an arrangement of this sort would in no way lower the standards of medical licensure in any state; on the contrary, it would strengthen the practice act and aid in securing better qualified physicians. The time is rapidly approaching when no one should enter on the practice of medicine without first having completed a year of clinical training under the direction of the attending staff of some good hospital.

POSITIVE RESULTS OF SANE FOURTH AGITATION

Over eight years ago, THE JOURNAL published its first report, showing that as a result of the use of fireworks in the celebration of the Fourth of July in that one year, 466 persons were killed and nearly 4,000 injured. Of those killed, over 400 died from tetanus, probably the most awful death known in modern times, while of those injured, many of them were blinded, or had their arms, legs, hands or fingers torn off, or were otherwise mutilated for life. For a few years previously a prominent newspaper, the *Chicago Tribune*, had been publishing, as a news feature, the immediate results of the celebration, but the complete figures, including the deaths from lockjaw, were not presented until in 1903 THE JOURNAL published its first report. This report, awful as it was, scarcely disturbed the self-complacency with which these matters then were viewed, and apparently any criticism of the methods of celebrating the anniversary of the signing of the Declaration of Independence was looked on as unpatriotic. But year after year THE JOURNAL has persisted not only in revealing the horrifying results of the use of fireworks, but also in pointing out how silly and inexcusable was a "patriotism" which demanded each year such a wanton destruction of life and limb. Gradually, however, results began to be seen. At first a few cities adopted prohibitive or restrictive measures with such positive reductions in the number of killed and injured that other cities have followed suit. The most positive evidence of the nation-wide movement for a sane celebration and for the lessened use of fireworks, is the dissolution of the Pain Manufacturing Company, the largest and best known fireworks firm in the country. Here is what the firm says regarding its failure:

> The season for the business conducted does not commence until June and runs for several months; the main business is done around and immediately previous to the Fourth of July each year. For the last years, or since the movement for what is commonly termed the "sane Fourth" has spread over the country, the value of the business done by the company has been reduced, so that at the present moment the amount of business the company is enabled to do is not sufficient to warrant the company's continuance.

Although one may have sympathy for those who have lost money or fortunes in the failure of this business enterprise, there is reason to rejoice, nevertheless, in the change of sentiment regarding the use of fireworks in our celebration which means, in future, the saving of thousands of lives, the prevention of many thousands of accidents and the saving from destruction by fire of property worth millions of dollars. It is gratifying to note, also, that instead of being continued as a hideous nightmare of disorder, danger and tumult, our Independence Day is being changed into a day for the development of genuine patriotism—respect for law and order, and pride in our national achievements.

NEITHER CLEVER NOR TRUTHFUL

The attempts of the lay press to comment on medical subjects are often most amusing when most seriously intended. Enjoyment of the unconscious humor in otherwise rather feeble witticisms like some which have recently appeared in *Life*, is hampered by the fact that these gibes at medical science are sometimes not only absurd, but viciously and maliciously untruthful, and, if they were seriously regarded, might result in public injury. For instance, *Life* comments as follows on the recent report that a Russian physician had committed murder by the use of diphtheria germs:

> "Why, in the name of common sense, didn't he employ typhoid fever 'germs' in the pretense of immunizing the count from ever having that disease, as our army surgeons are doing with all soldiers and sailors who 'volunteer'—under the pressure of the anger of their superior officers in case of refusal? Every such inoculation makes the lads ill ('reaction' is the technical term), and occasionally one of them will pass on, as the saying goes."

The item is headed "Not Clever." It should have been "Neither Clever nor Truthful." According to the

surgeon-general of the Army, about 20,000 antityphoid inoculations have been made in the Army of the United States. Of these, 85 per cent. caused no disagreeable symptoms whatever; 4.5 per cent. caused headache and slight temporary fever; and 0.5 per cent. more severe symptoms lasting several days; but in not a single instance has the procedure had any effects that could be called dangerous. There has been no death from this cause. The protective results of antityphoid vaccination in European armies, especially in the British army in India, have been so favorable as to warrant the continuance of inoculation. The comments of *Life* show glaring ignorance. We do not expect scientific accuracy from that publication, but even clowns should strive to keep within the bounds of common honesty by being truthful when they attempt to deal with serious matters, especially those which have a practical bearing on the public welfare.

AN "ALL-ROUND SPECIALIST"

Few there are who have looked to see a reincarnation in these days of the sage who took "all knowledge for his province." Viewing the vast and hitherto undreamed-of realms brought to human cognizance by specializing discoverers, timorous souls have believed—and the belief has become all too general in learned circles—that the complete mastery of even the complex science of medicine in all its divisions and branches was not to be expected of one human brain. It is now plain to be seen that we have despaired too soon. A prodigy has arisen in the west who announces himself on his letter-heads as an "All-Round Specialist." We should like to feel that the nursery of genius which produced the "All-Round Specialist" was engaged in fostering others of the same remarkable stock. We should then hear no more of the much-vexed problem of the division of fees between the specialist and the general practitioner, while the tedious distinctions between psychiatrist, ophthalmologist, pediatrist, gynecologist, dermatologist, and all the other medical specialists, would melt away like mist before the morning sun. Unfortunately, we are unable to find this gentleman's name on the alumni list of any medical college; so we fear that there is no hope for the present of a school of pan-specialists.

PROFESSOR VINCENT AND HIGHER EDUCATIONAL STANDARDS

If all statements appearing in the public press may be judged by those regarding the recent address by Prof. George E. Vincent,[1] then, indeed, very little confidence should be placed in newspaper reports. By quoting only the first part of a paragraph, the reports made it appear that Professor Vincent opposed higher standards of medical education, although a reading of the entire paragraph shows that the opposite is true. In fact, the address as a whole contains a severe arraignment of those who are opposing higher standards. Professor Vincent points out that one danger in raising educational standards—namely, limiting "the field of choice to those groups which can afford the cost of long and expensive preparation," which "socially and professionally . . . would be deplorable"—could be offset by establishing "a system of scholarships" which could be "awarded by competent authority, after adequate tests, and continued only so long as the scholar's work justifies the support." It can be seen how easily a wrong impression could be conveyed by omitting the latter part of the paragraph. And that is what was done in the newspaper reports. This misquotation might have passed without comment, except for two reasons. The first is that Professor Vincent is soon to take the presidency of the University of Minnesota and, therefore, his views will have much to do in shaping the future educational policy of that state. The second is that Minnesota is on the firing-line in the fight for higher standards of medical education, and the enemies of such standards have widely circulated this erroneous report of Professor Vincent's views in an effort to obstruct the movement for higher standards. In the paragraph just preceding the one misquoted, the speaker makes special reference to those who are opposing higher standards of medical education. He shows these to be self-interested persons who look on the "medical career chiefly as a means of livelihood," and who "resent the rising standards . . . as obstacles to the early enjoyment of an income." It is important that this misquotation should be corrected, and especially that the people of Minnesota should appreciate the fact that in Professor Vincent they will have an able champion in their battle for higher standards of medical education.

1. Standards and Authority, p. 894, this issue.

STREET DUST AND FOOD

House Bill 154, now before the Illinois legislature, contains some provisions which will scarcely be welcome to street vendors of goods and delicacies, and probably not to the larger retail dealers. Among these are provisions to suppress the nuisance of the exposure on the streets, without protection from the street dust or other contamination, of fruits, vegetables and other foods. It is unfortunate that the average buyer has not that keen realization of the history and composition of street dust which, if generally diffused, would make goods so exposed unsalable. On the contrary, dealers complain that their sales are lessened if they do not so expose their wares. Instruction in the schools, showing the sources and components of street dust, as well as the peril of insect contamination, might be an effective way of agitating the subject and reaching homes where at present even newspapers do not penetrate freely—not that the illiterate are the only persons who ignore the dangers of street dust. To make them effective, the excellent provisions of this bill should be reenforced by popular education, since it will be most difficult to enforce in those quarters where enforcement is most needed.

Fibroids and Pregnancy.—A fibroid projecting into the uterine cavity—that is, a fibroid inside of the uterus—usually acts as a barrier to pregnancy, and if this does occur an abortion is likely to follow.—M. A. Tate, before Obstet. Soc. of Cincinnati.

Medical News

ILLINOIS

Personal.—Fire at Abingdon, March 11, destroyed the office equipment of Drs. Charles F. and Everett H. Bradway, the loss being estimated at $1,000.——Dr. Barret B. Griffith, Springfield, who has been in Colorado Springs for several months on account of ill health, reports that he is slowly recovering from the injury to his foot.

Hospital Notes.—The John Warner Hospital, Clinton, is open for the reception of medical and surgical cases. Patients entering the hospital will be under the control of their own physicians as the hospital has no attending staff.

Chicago

Healer Fined.—A jury in the municipal court, on March 14, is said to have returned a verdict assessing a fine of $200 against Mrs. M. Selike, a Milwaukee Avenue healer.

Personal.—Dr. Svenning Dahl, while attempting to get into a moving elevator at the Norwegian Lutheran Deaconess Home and Hospital, March 14, fell, sustaining a compound fracture of the right leg.

INDIANA

Tuberculosis Hospital Almost Ready.—It is announced that the State Tuberculosis Hospital, Rockville, will be ready to receive patients, April 1.

Dispensary Opened Twice a Week.—It is announced that the Free Dispensary of St. Mary's Hospital, Evansville, will now be open on Tuesday and Friday afternoons between 3 and 4 o'clock.

Semi-Centennials.—Dr. Carter H. Smith, Lebanon, was the guest of honor at a banquet given by the Boone County Medical Society, March 7, on the occasion of his completion of half a century in the practice of medicine.——The semi-centennial of the practice of medicine of Dr. William B. Graham, Noblesville, was celebrated, March 14, at a banquet tendered Dr. Graham by the Hamilton County Medical Society.

Personal.—Dr. and Mrs. Bleeker J. Knapp, Evansville, sailed for the Mediterranean, March 4.——Dr. Orange G. Pfaff, Indianapolis, who has been seriously ill with septicemia, is now reported to be improving.——Dr. John S. Whitson, Jonesboro, was thrown from his automobile when it was struck by a trolley car, March 15, but sustained only slight injuries.——The trustees of Indiana University have acted favorably on the request of Dr. Henry R. Alburger of the medical department, to come to Indianapolis and assume the position of pathologist at the City Hospital.——Dr. David H. VanNuys is reported to be seriously ill at the home of his son in Anderson.——Dr. Charles S. Goar, Indianapolis, while crossing the railroad tracks, March 17, was struck by a switch engine, but was not seriously injured.

MARYLAND

New Officers Elected.—The section on Neurology and Psychiatry of the Baltimore City Medical Society, at its annual meeting, March 10, elected Dr. Arthur P. Herring, president; Dr. G. Lane Taneyhill, secretary, and Dr. William R. Dunton, a member of the executive committee.

Personal.—Dr. H. Barton Jacobs sailed for France, March 18.——Dr. William H. Welch has been honored by the emperor of Germany with the decoration of the royal crown of Prussia, second class.——Dr. Christopher Johnston, professor of Egyptology in Johns Hopkins University, is ill with organic heart disease.——Dr. George F. Speicher, intern at the Maryland General Hospital, was operated on at the hospital, March 6, and is reported to be doing well.

The Recent Diphtheria Epidemic.—Dr. William H. Welch, professor of pathology in Johns Hopkins University, delivered an address to the medical students in Hopkins Hospital, March 13, in which he reviewed the recent diphtheria epidemic. He stated that of the sixty-three persons who gave positive cultures, about forty showed symptoms of the disease, while the others were carriers. There were only two deaths, both in cases of children who were already victims of malignant disease. Dr. Welch complimented the hospital staff on the energetic way with which the diphtheria epidemic had been handled. No new cases have developed at the Johns Hopkins Hospital or at the Church Home and Infirmary, and these institutions as well as the Hebrew Hospital are open as usual. A case developed, March 15, at University Hospital, but the patient was promptly isolated and no other case occurred. Two cases have also been reported among the lodgers at the Central Young Men's Christian Association, but the patients were promptly sent to the Infectious Disease Hospital.

MICHIGAN

Antituberculosis Society Organized.—Manistee County Antituberculosis Society has been organized with Prof. S. W. Baker as president, and Dr. Szymon Szudrawski, Manistee, as secretary, and has begun an organized campaign against the disease. Dr. Alfred S. Warthin, Ann Arbor, will deliver two lectures before the society in April.

Personal.—Dr. Charles A. Walsh, Bay City, is reported to be in a critical condition from cerebral hemorrhage.——Dr. Herbert A. Eades, Bay City, was thrown from his automobile, March 13, receiving bruises and cuts.——Dr. Robert H. DeCoux, Grand Rapids, was thrown from his buggy in a runaway accident, March 8, fracturing three ribs and a clavicle.

State Sanatorium.—Admission to the State Sanatorium, Howell, is obtained after examination by physicians appointed for each county, and on furnishing a certificate by the family physician. A charge of $7.00 per week is made to those who are able to pay, but those who are unable to pay will be provided by the state with free care on proper certification from the superintendent of the poor and the judge of probate. No patient is allowed to remain longer than six months in the sanatorium save in unusual cases. It must be understood that the institution is for patients in the incipient stage of pulmonary tuberculosis, and in which a cure or arrest may be hoped for.

MINNESOTA

Interns Leave Hospital.—Three interns at the Swedish Hospital, Minneapolis, resenting the suspension of another intern, are said to have abandoned their work and left the hospital, February 25.

Speed Parting Guest.—Dr. Edward M. Gans, Eveleth, was the guest of honor at a dinner given, February 28, at which about 100 were present. Dr. Gans has severed his connection with the More Hospital and is about to move to North Dakota.

Deficiency Appropriation.—The senate committee has recommended that deficiency appropriation of $13,000 be made to enable the State Board of Health to continue its fight against tuberculosis.——The bill to appropriate $8,000 for the continuance of the work of the State Tuberculosis Commission was recommended for passage by the Senate Committee on Public Health, March 3.

NEW YORK

Medical Women Meet.—At the fifth annual meeting of the Women's Medical Society of New York State, held March 10, in the Academy of Medicine, New York City, Drs. Elizabeth M. Cushier, Manhattan, and Eliza M. Mosher, Brooklyn, delivered memorial addresses in honor of the late Drs. Elizabeth and Emily Blackwell. The following officers were elected: honorary president, Dr. Eliza M. Mosher, Brooklyn; president, Dr. Grace Peckham Murray, Manhattan; vice-presidents, Drs. Helene J. C. Kuhlmann, Buffalo; Angenette Parry, Manhattan, and Evelyn Garrigue, Millbrook; secretary, Dr. Eveline P. Ballintine, Rochester, and treasurer, Dr. Marion Craig Potter, Rochester. A banquet was given to the visiting delegates in the evening, over which Dr. Eliza M. Mosher presided.

Buffalo

Hospitals Opened.—The Ernest Wende Hospital, the temporary municipal hospital for contagious diseases, which has been renovated and newly equipped, is ready to receive patients.——The new contagious disease pavilion of the Children's Hospital is completed and ready to receive patients.

Personal.—Dr. Francis C. Goldsborough, formerly instructor in obstetrics at Johns Hopkins University, Baltimore, has succeeded Dr. Matthew D. Mann as professor of obstetrics at the University of Buffalo.——Dr. Archibald D. Carpenter has been elected chairman of the Civil Service Commission.——Dr. John D. Howland, deputy medical examiner of Erie County, has been appointed superintendent of the Erie County Hospital, vice Dr. Carroll J. Roberts, who has gone abroad.——Dr. Pierce J. Candee is ill with typhoid fever.——Dr. George B. Stocker has been appointed deputy medical examiner of Erie County.——Dr. Daniel V. McClure has been certified by the State Civil Service Commission at the head of the list of successful candidates at the recent competitive examination for medical superintendent of Erie County Almshouse.——Dr. Edward J. Meyer, who was operated on for hernia and appendicitis at St. Mary's Hospital, Rochester, Minn., February 13, is convalescent.——Dr. William H. Mansperger, who was recently operated on at St. Mary's Hospital, Rochester, Minn., is reported to be convalescent.

New York City

Middleton Goldsmith Lecture.—The Middleton Goldsmith Lecture of the New York Pathologic Society was delivered at the New York Academy of Medicine, March 18, by Prof. Frank P. Underhill, Yale University, on "A Consideration of Some Chemical Transformations of Proteins and Their Possible Bearing on Problems in Pathology."

Personal.—Dr. John N. Beekman, a retired practitioner, was knocked down by a truck at East Fourteenth Street, March 13, and painfully injured.——Health Commissioner Lederle returned from a vacation in a houseboat in Florida, March 12. ——Dr. Robert S. Adams, house physician at the Waldorf-Astoria, is reported to be seriously ill at Murray Hill Sanitarium.——Dr. Burt D. Harrington, Brooklyn, is reported to be critically ill with erysipelas.——Dr. Godfrey R. Pisek has been appointed attending physician to the Willard Parker Hospital.

For the Control of Venereal Diseases.—At the meeting of the New York Obstetrical Society, held March 14, the subject for the evening was "Some of the Duties of the Gynecologist to the State and Public." The following resolution was adopted: Resolved, That it is the opinion of the New York State Obstetrical Society that the time has come to make a beginning in the control of venereal diseases: That the first necessity is for the provision of a place for the detention and care of flagrant and especially dangerous cases: That in pursuance of this object the Board of Estimate and Apportionment be requested to grant the request of the Board of Health for the provision of such a hospital.

Meningitis on Liner.—The Greek steamship *Patris* arrived at quarantine with five cases of cerebrospinal meningitis. Six other passengers died from the disease at sea. Dr. Alvah H. Doty said that for several years he had been watching for this disease and had found that as a rule it is brought on steamships from Greece.——On the steamship *Martha Washington*, which arrived a few days later from Trieste, Patras, Palermo and Algiers, there were four steerage passengers who seemed to be suffering from cerebrospinal meningitis and one passenger had died at sea whose symptoms were those of meningitis. All the patients were treated with Flexner's serum and the steamer will be held at quarantine until bacteriologic examinations have been made.

Health Bulletins.—The first of the three latest press bulletins of the Department of Health deals with fresh air, which is a great preventive of many infectious diseases, and states furthermore that the polluted atmosphere of ill ventilated rooms is one of the important factors in promoting the spread of diseases; the second warns the public, particularly those living on the lower East Side, against the danger from the use of wood alcohol which is mixed with cheap drinks by certain unscrupulous and criminal proprietors of barrooms and itinerant venders; and the third, details the work of the department in the supervision of midwifery, and states that out of 129,031 births reported in the city in 1910, 52,010 were under the care of midwives. Since February 15 a new system has been inaugurated and put in effect by the Division of Child Hygiene. The city has been divided into 140 districts, corresponding to the school inspection districts, each under the charge of a medical inspector. Each inspector has a card index of each midwife in the district, and visits each midwife at least once a month. Any irregularity in equipment or manner of work of the midwife, or any insanitary condition in their homes is at once reported by the inspector. Investigations are made in all cases in which complaints are made.

Announcement of the Monthly Bulletin.—The ultimate object of all public health work is the preservation of health and the prolongation of life. As there can be no subject of more vital interest to each individual, the Department of Health desires the cooperation of every citizen, and presents the Bulletin as a means towards this end. It was interesting to note a steady fall in the death-rate from 28 per 1,000 in 1868 to 16 per 1,000 in 1910. From another table it was interesting to note the enormous reduction in mortality which had taken place in those whose ages were below 45; there had been no decline but an increase in the mortality in the ages over 46. While there has been a decided reduction in the mortality from smallpox, typhoid fever, diphtheria and pulmonary tuberculosis, there has been but little change in the mortality from measles, scarlet fever and bronchitis, and there is an increase in that from pneumonia, cancer, Bright's disease and heart disease. The division of communicable diseases is charged with (a) the sanitary supervision of tuberculosis, typhoid fever, cerebrospinal meningitis, malaria, puerperal septicemia, abortion and erysipelas; (b) the conduction of tuberculosis clinics and boat camps; (c) the administration of antitoxin and the performance of intubation in diphtheria; (d) the management of the diagnosis laboratory, and the collection of specimens from branch stations throughout the city. The division of child hygiene has the following functions: (a) the control of the practice of midwives; (b) the supervision of foundlings; (c) the supervision of day nurseries and institutions for the care of dependent children; (d) the care of babies and prevention of infant mortality; (e) the medical inspection of and examination of school children; (f) the issuance of employment certificates.

PENNSYLVANIA

Personal.—Dr. John W. Beckett, Pittsburg, was struck by a trolley car, March 10, and seriously injured.——Dr. William M. Johnson, a retired practitioner of Harrisburg, is said to have been adjudged insane by the county court of Davidson County, Tenn.

New Medical Club.—The physicians of York have organized the York Medical Club with an initial membership of forty-five, and elected the following officers: president, Dr. Edward W. Brickley; vice-president, Dr. Lawton M. Hartman; secretary, Dr. William S. Weakley, and treasurer, Dr. Parker N. Wentz.

White Haven Report.—At the annual meeting of the White Haven Sanatorium Association, held March 13, Dr. Lawrence F. Flick, the president, announced the completion of an administration building, the completion of which added $11,000 to the debt of the association, making a total debt of $25,000. Last year 552 patients were admitted and a total of 683 patients treated. Of these 477 left or were discharged and there were 38 deaths. The report also showed that in 31 cases the disease was arrested; in 50 cases much improved; in 254 improved; of the other patients, 106 were not improved and one-third of these left the first month. The average cost of maintenance per patient per week was $8.81 and the total amount expended for maintenance was $67,282.99. The total receipts, including the balance for last year, was $112,000. The total expenditures for the year were $109,487. There was a loss of nearly 12 cents daily in the maintenance of each patient. There are 206 beds available for patients, of whom there have been 5,550 since opening. A building has been donated by Mrs. Eckley Coxe for the care of patients received in a dying condition.

Philadelphia

Medico-Chirurgical's New Building.—Plans are being prepared for several new buildings for the Medico-Chirurgical College, to be built on the south side of Cherry Street, between Seventeenth and Eighteenth Streets. The first building will be a one-story structure with a glass roof to be used for laboratory purposes. A fifth story will also be added to the present dispensary building on Cherry Street. Plans have been completed for the erection of a large corrugated-iron building on the lot adjoining the Medico-Chirurgical Hospital. The first use to which the addition will be put will be a bazaar and fair, to be held from May 29 to June 3 for the benefit of the hospital.

Personal.—Dr. George E. deSchweinitz announces that there is no basis for the rumor that he intends to resign the chair of ophthalmology in the Medical School of the University of Pennsylvania.——Dean Allen J. Smith, of the University of Pennsylvania, closed a series of popular health lectures, given under the auspices of the medical faculty, March 17. His talk was on "Flies and Other Insects as Carriers of Disease."——Dr. L. Webster Fox, who has been ill at his home in Haverford, is convalescent.——Dr. W. E. Kepler has been appointed an assistant medical inspector by Director Neff of the Department of Health and Charities.——Dr. Joseph S. Neff, Director of Public Health and Charities, who was injured by a fall in Atlantic City, March 13, has completely recovered.

VIRGINIA

New College Building.—It is reported that the University College of Medicine, Richmond, has placed the contract for the erection of a new college building to replace the one destroyed by fire in January last year. The new building will cost about $135,000, and will be completed within a year.

Epileptic Colony.—The recent decision of the state supreme court against the Western State Hospital board in its efforts to retain the Muckland property, Lynchburg, means that the property may be sold and the proceeds used for the development of the State Epileptic Colony, which already has been opened with 100 inmates.

Station at Sanatorium.—The Norfolk and Western Railroad has ordered a station to be erected at the Catawba Road crossing for the accommodation of patients and others en

route to the State Sanatorium. The company has also put on an extra train on Tuesdays and Fridays for Catawba, which will meet the main-line trains.

WISCONSIN

Cottages for Isolation Hospital.—The city council of Racine has reported favorably on the appropriation for the construction of two cottages on the Isolation Hospital property south of the city for the care of individuals suffering from communicable diseases.

Personal.—Dr. John B. Spaulding, health officer of Kenosha, sustained severe injuries to his eyes by the breaking of a bottle of formaldehyd which he was using while making a fumigation.——Dr. Henry T. Brogan, city physician of West Allis, who has been critically ill with heart disease, is reported to be out of immediate danger.——Dr. Henry Blank, Milwaukee, has been appointed a trustee of the Johnston Emergency Hospital, vice Dr. Louis Fuldner, resigned.——Dr. Rollo U. Cairns, River Falls, has returned from abroad.——Dr. Gilbert E. Seaman, Milwaukee, has been appointed regent at large for the Milwaukee University.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 11, 1911.

A New Reportable Disease

The London County Council has issued an order making ophthalmia neonatorum a reportable disease. Thus, as in cases of the specific fevers, immediately on diagnosis a case must be reported to the health officer. The object is that more effectual means may be taken for its prevention and treatment.

Plague in India

According to the latest reports, there seems every indication that India is again entering on another grave epidemic of plague. During the week ended February 11, 24,715 cases and 22,278 deaths were reported. Of these deaths 11,116 occurred in the United Provinces. In this district the deaths during the whole of 1908 amounted only to 22,878 and during 1909 to 38,298.

Economic Entomology

The recent discoveries of the important part played by insects in the propagation of tropical diseases has caused much attention to be devoted to entomology, particularly economic entomology, in Great Britain, which has such extensive tropical possessions. At the Imperial College of Science and Technology, South Kensington, a course of studies in practical entomology for the training of young students has been inaugurated. The objects are to stimulate interest in the study of noxious insects throughout the tropical colonies, and thus gradually to organize an army of collectors and observers who will accumulate the material necessary for coping with the numerous pests which cause disease and devastate crops. The work has been placed under the control of Mr. Maxwell-Lefroy, imperial entomologist to the government of India.

Mr. Andrew Carnegie has agreed to pay for three years the expenses of sending three or four young men to the United States to receive a thorough training in the methods of dealing with noxious insects. At present, two traveling entomologists, appointed by the government, are traversing the whole of the British colonies in tropical Africa, and have received instructions to supply any official or resident with apparatus for the collection of specimens of noxious insects, and to give practical instructions. A preliminary survey has already been made of Nigeria, Nyassaland and part of British East Africa. Considering the paucity of the white population the number of men who have volunteered to assist in the work is highly creditable.

The Outbreak of Small-Pox

Since the outbreak of small-pox in London was reported in THE JOURNAL, March 18, fresh cases have occurred almost daily. There are now 42 patients under treatment and nine deaths have taken place. The disease has spread from the district of Mile End over a large part of the East End and has invaded part of the West and South. The question of the condition of the patients as regards vaccination is interesting. Seven children under the age of 8 have been attacked, of whom only two are said to have been vaccinated. These two had the disease in a very mild form and hardly seemed deranged in health. On the other hand, of the other unvaccinated five, four died. Of fourteen patients between the ages of 8 and 30 years, three had never been vaccinated and eleven were vaccinated in infancy; none had been revaccinated. Of thirteen patients between ages of 30 and 60 all had been vaccinated in infancy, but none had been revaccinated; two died, Two of three patients over 60 died; they had all been vaccinated in infancy, but none had been revaccinated. Thus no case has so far occurred in a revaccinated person.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 3, 1911.

Antityphoid Vaccination

The Académie de médecine adopted the conclusions of Dr. Vincent's report (THE JOURNAL, Feb. 25, 1911, p. 601), put in the form of a motion, recommending the facultative employment of antityphoid vaccination. In the draft of the budget of the war department for 1911 is a provision of $3,000 (15,000 francs) for the organization of a service of antityphoid vaccination to be annexed to the laboratory of the hospital connected with the school of Val-de-Grâce. Once installed, this service will cost annually about $600 (3,000 francs).

The Study of the Gastric Secretion at High Altitudes

On ascending to high levels anorexia is commonly experienced, generally accompanied by nausea and vomiting, of which the relative deprivation of oxygen is the most apparent cause. Dr. Raoul Bayeux of Paris has just communicated to the Académie des sciences the results of a series of experiments which he undertook on Mont Blanc to elucidate the mechanism of this anorexia by studying in a dog which had a gastric fistula the variations caused by the high altitude (4,360 meters, or over 14,000 feet), in the quantity of gastric juice secreted and its total acidity. He has ascertained that the quantity of gastric juice secreted in a given time after identical meals diminishes notably during sojourn at high altitude; the total acidity of this juice is only slightly diminished under the same conditions. The rate of secretion of the gastric juice is much retarded. This decrease of the secretory activity of the stomach is in harmony with the diminution of combustion already noted by Dr. Bayeux at the same altitudes. The insufficiency of gastric juice explains the loss of appetite. It also seems to explain the desire which is felt at very high altitudes for all foods capable of exciting the flow of gastric juice or supplying its place, such as lemon juice, vinegar and spices.

Internships Reserved for Women

A notice recently placed in the walls of the hospitals and of the Faculté de médecine aroused considerable interest among the students. It is in regard to the *concours* for the internship of the national asylum for convalescent women in the suburbs of Paris. The administration states that since the hospital is for women it seems to be appropriate to reserve the internships for women students alone.

Glycerin and Potassium Permanganate Cause Fire

In some military maneuvers, recently, a bottle of glycerin was broken and the glycerin ran over some packets of permanganate of potassium. These packets were covered with absorbent cotton, which took fire. Experiments show that chemical reaction takes place, with explosion and fire. It is therefore important to avoid packing glycerin and permanganate of potassium near each other in sanitary stores.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 2, 1911.

Personal

Professor Bernstein, director of the physiologic institute at Halle, will resign his teaching position at the beginning of the winter semester on account of advanced age.

Progress in the Care of Youths by the Prussian Government

According to an order of the department of education, dated January 18, the Prussian government will undertake the care of youths, that is, the intellectual, moral and physical welfare of young men from the time of leaving school until their period of military service. The associations already existing for this purpose will receive aid and new ones will be formed under the auspices of the authorities, and an appropriation of $250,000 has been made by the government for the

purpose. The aims are to promote physical exercises (gymnastics, active sports, tours, etc.), encouragement of nature study, instruction in scientific and hygienic subjects, etc. The cooperation of physicians in the fulfilment of this task is very much desired by the minister.

Failure of the British Government to Take Part in the International Exposition of Hygiene at Dresden

While almost all of the civilized nations have already indicated their intention to send official representatives to the international exposition of hygiene at Dresden and to establish special national sections, the British government declined some time ago to participate. In the British House of Commons the minister of commerce was asked a short time ago the reasons for this decision. His answer was that the department of commerce had been required to furnish an official British section in the expositions at Brussels and Buenos Aires in 1910 and in the expositions at Rome and Turin in 1911. In consequence of these frequent demands on British industry for representation at expositions, the department of commerce was not able to take part in the organization of a section at Dresden. We are convinced that not only the British government but British trade will be little satisfied with this short-sighted position taken by the minister of commerce, for in the competition between the nations, which promises to be very lively at the Dresden exposition, Great Britain will play a quite unsatisfactory rôle.

Tuberculin Treatment of Railroad Employees

The pension office for the employees of the Prussian railroads is from now on to permit those patients with pulmonary tuberculosis, who have finished a treatment in one of their sanatoria, to be treated in an ambulant way with tuberculin by the physicians of the office if the sanatorium considers this desirable for a permanent cure. The tuberculin treatment, which is restricted to special cases, is carried out according to suitable regulations under careful directions of the sanatoria. Further, the pension office provides courses of instruction in two sanatoria for railroad surgeons on tuberculin treatment.

Railway Car Hygiene

A short time ago a representative in the Prussian parliament called attention to the imperfect hygiene of railway cars. He cited a case in which a member of parliament had evidently acquired a severe skin disease from the upholstered back of his seat during a railway journey. The member of parliament, therefore, wants the railway management to adopt for trial some apparatus for protection of the head and neck to be applied to the upholstered back of the seat. He recommended an apparatus in which protective strips of Japanese crêpe paper are so arranged that the passenger can draw out a strip to place under the head and neck. We scarcely believe that the railway management will adopt this recommendation, which would be quite expensive and which could not be guarded against abuse. Protective coverings for the head in railroad travel are already for sale and can be provided by anyone at slight expense.

Association News

TRAINS TO LOS ANGELES

Details of Special Trains and Special Parties Arranged for the Trip to the Next Annual Session

For many weeks past there have been printed in this department of Association News various details concerning the Los Angeles session and the trip thereto, viz., lists of meeting places, a schedule of hotels and rates, railroad rates, etc. (The eastern rates have not been announced; they will be given in these columns as soon as the information can be obtained.) Announcement has also been made that early in May there will be a special issue of THE JOURNAL reiterating all this information and giving also the program of each Section and much other information such as is usually gathered into this annual special number. It will contain a map of Los Angeles and many fine pictures of that city.

In attending this session a wonderful opportunity is offered for a vacation that will be not only a pleasurable one, but also a profitable one. The amount of pleasure and profit to be gained by the trip, however, will depend on whether the individual has studied for himself the opportunities presented.

Below are given in brief accounts of some of the special parties that are being arranged. But no one will depend alone on this description. Everyone who is thinking of going to Los Angeles should write for booklets and information to all whose addresses are given in the following itineraries. If these books are studied, one can obtain a general knowledge of the various attractions and then can decide which route is the most attractive. Some will want to see the Grand Canyon of the Arizona, a sight worth a trip across the country. Others will feel more favorable to the Pike's Peak country, Manitou, the Garden of the Gods and the various attractions of that part of the Rocky Mountains. Others will have a great desire to see the Yellowstone Park and its wonders. Still others will seek the northwestern part of the country—Oregon, Washington, etc., and the attractions of the Canadian Rockies on the Canadian Pacific. Not all of these can be seen on one trip, even on the round trip. Each individual should make up his mind what he is most anxious to see and then study the various itineraries and learn which one will best suit him.

The advantages of selecting one of the special trains, rather than to go by the regular trains, are the additional conveniences provided, the pleasure of traveling with friends and acquaintances, and the relief from the cares of looking after change of trains, hunting up conveyances for side trips, guides, etc., and the satisfaction of having everything provided in advance for comfort and for entertainment during the trip.

We mention below the special trains concerning which we have received information:

AMERICAN MEDICAL SPECIAL.—This luxurious Pullman train with full equipment will run from Chicago to Los Angeles via the Santa Fe and will leave Chicago at 8:00 p. m., Wednesday, June 21, reaching Kansas City at 9:00 a. m., Thursday, June 22, and running thence through New Mexico and Arizona to Los Angeles, which will be reached Monday, June 26, at 7:00 a. m. At Albuquerque the train will make a stop of an hour and a half to allow an inspection of the Fred Harvey collection of Indian handwork. Another stop will be made at Laguna, where an hour will be allowed to inspect the village of the Laguna Indians. The train will stop at the Grand Canyon for twenty-eight hours, giving opportunity to see the Grand Canyon of the Arizona. The desert of lower California will be crossed in the night. At San Bernardino the train will be divided—one section running through directly to Los Angeles, arriving at 7:00 a. m.—and the other going via Redlands and Riverside, stopping at each of these places to allow visits to points of interest. This section arrives at Los Angeles at 4:30 p. m., Monday. Special illustrated folders, reservations and full information may be obtained from G. T. Gunnip, General Agent, A. T. & S. F. Ry., 105 Adams Street, Chicago.

AMERICAN ACADEMY OF MEDICINE TOUR.—Another trip arranged from the east is that of the American Academy of Medicine, whose itineraries have been selected and arranged under the guidance of the passenger departments of the railroads to secure the most desirable trains and the best disposition of daylight sight seeing. Regular trains will be used. This party will leave New York over the Lehigh Valley railroad at 11:55 a. m., Monday, June 12, Philadelphia, at 12:30 p. m., and join the New York train at South Bethlehem at 2:12 p. m. and arrive at Buffalo over the Lehigh Valley at 10:27 p. m. The route will be thence over the Grand Trunk to Chicago, the Burlington to Dénver and to Los Angeles over the Santa Fe. Interesting side trips and visits to the points of interest in Colorado and to the Grand Canyon will be provided for and Los Angeles will be reached Friday, June 23, in time for the sessions of the academy, which meets in advance of the American Medical Association. This party may be joined at various points along the route at a much later date, in case it is not desired to spend so much time on the going trip. Reservations for this party are to be made through the secretary, Dr. Charles McIntire, 52 North Fourth Street, Easton, Pa., from whom may be obtained the folder containing all details, both of the outgoing and of the return trip.

BURLINGTON-COLORADO SCENIC SPECIAL.—This special train from Chicago to Los Angeles, via the Burlington, Denver & Rio Grande and the Salt Lake Route, will have the finest equipment of the Burlington road. It leaves Chicago at 11:00 p. m., June 21, and reaches Denver at 7:00 a. m., June 23. The party will spend four hours in Denver and vicinity, leaving at 11:00 a. m., June 23, reaching Colorado Springs (Manitou) at 1:30 p. m. The train will be parked and will remain there all night. This will give an opportunity for the party to go up Pike's Peak, visit the Garden of the Gods, Cheyenne Canyon, the celebrated "High Drive," the famous Iron and Soda Springs, and other points. The train leaves Manitou at 4:30 a. m., June 24, and reaches the Royal Gorge at 7:30 a. m., giving a splendid opportunity to see this wonderful gorge. At Glenwood Springs, an hour and a half will be spent, and Salt Lake City will be reached at 8:30 a. m., June 25. Four hours will be spent in Salt Lake, leaving at 1:00 p. m., and Los Angeles will be reached at 12:00 o'clock noon on June 26. This train traverses the mining regions of Utah and Nevada, and Rainbow Canyon and the Canyon of the Mojave River before reaching the orange country of southern California. This train has been arranged at the request of many physicians (represented by Drs. Robert T. Gillmore, Sidney Kuh and Charles B. Reed), who want to go by the Manitou and Royal Gorge route. Full details and illustrated booklets may be obtained from A. J. Poole, General Agent, C. B. & Q. Ry., Chicago.

CHICAGO MEDICAL SOCIETY SPECIAL.—The special train of the Chicago Medical Society will leave Chicago at 9:15 p. m., June 22, via the C. & N. W. Ry.; arrive in Omaha 9:15 a. m., June 23, leave Omaha 9:30 a. m., arrive in Salt Lake 1:30 p. m., June 24, spending the afternoon at Salt Lake, leaving at 5:30 p. m., June 24, via Salt Lake Route, arriving at Los Angeles at 4:30 p. m., June 25. This train will be provided with full Pullman equipment of the most complete and modern character. Meals in dining car will be served à la carte. At Salt Lake arrangements will be made for a special organ recital at the Mormon tabernacle, balance of the afternoon to be spent in sight-seeing. Leaving Salt Lake, the journey lies over the Salt Lake Route through Utah and Nevada, reaching the rich mining districts, passing through Caliente, where Rainbow Canyon is entered, with its great walls of rock of every shade; and Las Vegas. Entering California, the line traverses the canyon of the Mojave river and at San Bernardino reaches the famous Orange Belt of California. The train then runs through Riverside, Ontario and Pomona, cities situated in the fruit-growing section adjacent to Los Angeles. Arrangements have been made so that any physician anticipating telegrams en route will have same sent in care of this special train and be received promptly. Standard sleeping car rate, $13.00 for double lower berth, $10.40 for upper berth, $36.50 for compartment, and $46.00 for drawing room. Elaborate itinerary will be furnished on application to Dr. George F. Suker, Secretary, 103 State Street, Chicago.

GATES SPECIAL TRAIN.—A special itinerary is being arranged by the Gates Tours of Toledo, O., with several optional return schedules. A special train will leave Chicago, June 20, stopping enroute at the Grand Canyon, and returning, trains will leave Los Angeles July 1. Full details of the trips, including the return schedules which include Alaska, may be obtained of the Gates Tours, Toledo, O.

MISSOURI VALLEY SPECIAL.—This special train, under the auspices of the Medical Society of the Missouri Valley and the Medical Association of the Southwest, will accommodate members from the central west and southwest. It will leave Kansas City Thursday, June 22, via the Santa Fe, and will also stop over one day for the trip to the beautiful Grand Canyon. It will arrive at Los Angeles on Sunday, after the trip through the orange country. The tour will be personally conducted and a special interesting itinerary is planned for the return trip. Full particulars may be obtained, and hotel and Pullman accommodations arranged for, through Dr. Charles Wood Fassett, St. Joseph, Mo.

NEW YORK AND NEW ENGLAND SPECIAL.—This is another train which has been planned in care of McCann's Tours by Dr. Wisner R. Townsend, Secretary of the New York State Medical Society. This train, fully equipped with modern conveniences and comforts, will leave New York, via the New York Central Lines, at 6:30 p. m., Monday, June 19, connecting with trains leaving Boston at 2:00 p. m., Worcester at 3:11 p. m., Springfield 4:40 p. m., and Pittsfield 6:30 p. m. It leaves Albany at 9:55 p. m., Utica 11:55 p. m., Syracuse 1:08 a. m., June 20, Rochester 2:45 a. m., Buffalo 4:30 a. m. The train will run thence via Cleveland, Indianapolis and St. Louis, and from Kansas City via the Santa Fe through New Mexico and Arizona, reaching the Grand Canyon, Friday, June 23, where twenty-eight hours will be devoted to sight seeing in this marvelous natural chasm, one of the wonders of the world. Los Angeles will be reached at 9:00 p. m., June 25. Time will be allowed to visit the famous orange groves and to view the other points of interest at Riverside and Redlands, as has been described above concerning the other trains. The return trip is one of some length and will include many other parts of the beautiful west which are to be enjoyed at leisure. Information concerning this tour and the daily schedule of the train, including the various possibilities on the return trip, may be obtained through Dr. Wisner R. Townsend, 125 W. 58th Street, New York City.

PENNSYLVANIA SPECIAL.—From the east a personally conducted tour has been arranged under the direction of Dr. C. L. Stevens, Secretary of the Pennsylvania State Medical Society, Athens, Pa., in conjunction with McCann's Tours. The train will be of the highest grade Pullman equipment, including a gentlemen's club car and a ladies' club and observation car, with all the accessories and accommodations of the modern train *de luxe*. The special train will leave Jersey City Saturday, June 17, at 4:14 p. m., via the Lehigh Valley railroad, and may be joined at various points between there and Buffalo by passengers from New Jersey, eastern Pennsylvania and Maryland. The train will leave Buffalo via the Lake Shore at 4:30 a. m., June 18, running thence through Cleveland, Indianapolis, St. Louis, Kansas City, Santa Fe, and Albuquerque to the Grand Canyon, where a side trip of twenty-eight hours will be made. Thence the route will include the heart of the orange country in California, Riverside and Redlands, at both of which places time stops will be made. Los Angeles will be reached Friday, June 23, at 9:00 p. m. Full information concerning this tour is contained in a little booklet, which may be obtained from Secretary Stevens.

RETURN TRIPS

As will be noted, several of these tours provide for the return trip by different routes, with interesting side trips. Full information about them can be obtained from the railroads or from the parties named above. In the advertising pages of THE JOURNAL, now and in later issues, will be found announcements of many of these railroads and trips. Members are urged to secure the booklets and folders issued by the railroads concerning these trips and post themselves in order to secure the greatest advantages from the visit to the west.

There are numerous ways of returning from the meeting, all of which offer advantages that will appeal to the members and their friends. The return trip from Los Angeles may be made by boat to San Francisco, Portland and Seattle, or by the southern routes over the Southern Pacific, the Rock Island, the Santa Fe, the Salt Lake route or through San Francisco by way of the Southern Pacific and Union Pacific, which offers opportunity for a side trip to the Yellowstone Park and a visit to Salt Lake and all the points of interest in Colorado. Or the return trip may be made by the northern routes—the Northern Pacific, the Chicago, Milwaukee and St. Paul, the Great Northern or the Canadian Pacific—visiting the cities of the northwest—Portland, Tacoma, Seattle and Vancouver—and the various points of interest in the Rockies, including the trip to Yellowstone Park, which may be reached from the Northern Pacific at Livingston, Montana.

Even Alaska and Hawaii will be visited by some. The beauties of the west are at the service of the physicians and their families and friends, and a delightful outing is ready.

Marriages

LEROY S. TOWNSEND, M.D., to Mrs. Grace R. Coates, both of Beaver Falls, Pa., February 28.

GEORGE A. NOLAND, M.D., Ashburn, Va., to Miss Mary Louise Lambert, at Baltimore, March 8.

WILLIAM DAVIS TEWKSBURY, M.D., Washington, D. C., to Miss Susan Tidball West, at Roanoke, Va., February 25.

Deaths

William Warren Potter, M.D. A surgeon of skill and judgment, and a student of acumen and originality in medical science, died at his home in Buffalo, March 14, aged 72. He was born in Strykersville, N. Y., and was graduated from the Medical Department of the University of Buffalo in 1859. He came of a long direct and collateral line of celebrated physicians. At the outbreak of the Civil War, he entered the service as assistant surgeon of the Forty-Ninth New York Volunteer Infantry, served in the Army of the Potomac, was captured, and confined in Libby Prison, but soon exchanged. He was afterward promoted to surgeon of the Fifty-Seventh New York Volunteer Infantry, and after the battle of Gettysburg, was assigned to the charge of the First Division Hospital, Second Army Corps. He was brevetted lieutenant colonel, U. S. V. for faithful and meritorious services. After the close of the war Dr. Potter practiced in Batavia but soon returned to Buffalo. Of late years he has limited his practice to gynecology. His society membership includes the American Medical Association, in which he was chairman of the Section on Diseases of Women in 1890; the Medical Society of the State of New York, of which he was president in 1891; the Medical Society of the County of Erie, of which he was president in 1893; and the Buffalo Medical and Surgical Association, of which he was president in 1886. He has been secretary of the American Association of Obstetricians and Gynecologists since 1888; and was president of the Section on Gynecology and Abdominal Surgery of the first Pan-American Medical Congress. Since 1891, he had been the president and examiner in obstetrics and gynecology of the New York State Board of Medical Examiners, and from 1895 to 1899, he was president of the National Confederation of Medical Examining and Licensing Boards. He was also consulting surgeon to the Buffalo General Hospital. Dr. Potter has been editor of the *Buffalo Medical Journal* since 1888. His death is a great loss to his colleagues in Buffalo and western New York and to the medical profession at large.

George Gorgas Craig, M.D. Jefferson Medical College, 1869; one of the most prominent practitioners of western Illinois, died at his home in Rock Island, March 12, from pneumonia, complicated by cirrhosis of the liver, aged 65. At the age of 17 he enlisted in the Fifty-First Pennsylvania Volunteer Infantry and served through the last two years of the Civil War. Immediately after his graduation he moved to Rock Island, where he afterward resided. In May, 1889, he was appointed acting assistant surgeon U. S. Army and surgeon to the Rock Island Arsenal by the Secretary of War and served continuously in this position until his death. When the Medical Reserve Corps was created he was commissioned as a first lieutenant in that body. Dr. Craig devoted much time to the study of sanitary science and was instrumental in the organization of the Health Department of Rock Island. In 1896, with Dr. Carl Bernhardi, and the late Dr. C. C. Carter, he founded the Rock Island Sanitarium, with which he was connected until it was dissolved in 1906. His society membership included the American Medical Association, American Public Health Association, and Association of Military Surgeons of the United States. He was past president of the Illinois and Iowa Central District Medical Association, and Rock Island County Medical Society.

Warren Bell Outten, M.D. Washington University, St. Louis, 1866; a member of the American Medical Association; and a prominent railway surgeon of the Southwest; died at his home in St. Louis, March 18, from pneumonia, aged 66. For thirty-six years Dr. Outten was chief surgeon of the Missouri Pacific Railway Hospital Department. He was consulting surgeon to the Missouri Pacific System, and president of the National Association of Railway Surgeons. During the cholera epidemic in 1866, he served as acting assistant surgeon U. S. Army. He was consulting surgeon to the St. Louis City Hospital, St. Luke's Hospital, the Baptist Sanitarium, and Mount St. Rosa Infirmary. He was also president of the *Interstate Medical Journal* Company. Dr. Outten was an authority on railway injuries, and was the author of a valuable work entitled "Railway Injuries; Their Clinical and Medicolegal Features."

Pierre Wilson, M.D. Missouri Medical College, St. Louis, 1884; formerly a member of the American Medical Association; professor of pathology, gynecology and abdominal surgery in Baylor University, Dallas, Tex.; died at his home in Harlingen, Tex., March 8. The Dallas Medical and Surgical Society, at its monthly meeting, March 10, adopted resolutions setting forth the service to humanity rendered by Dr. Wilson, and extending sympathy to his family. Similar resolutions were passed by the students of the departments of medicine and pharmacy of Baylor University.

Samuel Hall, M.D. New York University, New York City, 1843; a member of the Volunteer Corps of New York City during the Civil War; formerly a member of the New York Academy of Medicine, and vice-president of the Medical Alumni Association of New York University; consulting physician to the Northern Dispensary, commissioner of public works in New York City in 1873; and trustee of the New York and Brooklyn Bridge; president of the school board of Rye in 1894; died in his apartments in New York City, March 10, aged 91.

Thomas F. O'Malley, M.D. Rush Medical College, 1886; a member of the Illinois State Medical Society; who in his young manhood studied for the priesthood in Ireland but was never ordained; from 1892 to 1899 chief medical examiner of the Catholic Order of Foresters; died at his home in Chicago, March 19, from pneumonia, aged 50.

Horace A. Peabody, M.D. College of Physicians and Surgeons, Chicago, 1886; formerly a member of the South Dakota State Medical Association; a specialist on diseases of the eye, ear, nose and throat of Webster; formerly president of the State Board of Health; died in St. Augustine, Fla., March 6, from heart disease, aged 55.

John A. M. Lambert, M.D. Medical School of Maine, Brunswick, 1852; formerly president of the Bennington County (Vt.), and Berkshire County (N. Y.) Medical Societies; historian of Washington County (N. Y.) Medical Society; died at his home in Salem, N. Y., March 2, from cerebral hemorrhage, aged 82.

Hiram Noble, M.D. Victoria College, Coburg, Ont., 1857; formerly of Onawa, Iowa; and later councilman and twice mayor of Blair, Neb.; a member of the Washington County board and of the local pension board, and county physician; died at his home in Blair, March 8, from cerebral hemorrhage, aged 82.

Thomas Beattie, M.D. University of Edinburgh, Scotland, 1849; M.R.C.S., Edinburgh, 1849; surgeon of the ship *Restitution* on its cruise round Greenland in 1849; for more than fifty years a practitioner of Cass County, Mo.; died at his home in Harrisonville, February 3, from cerebral hemorrhage, aged 83.

Harry Cheetham Leech, M.D. University of Pennsylvania, Philadelphia, 1907; of Providence, R. I.; died in a drugstore in that city, March 6, aged 26, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of the death of his mother.

Thomas L. Foulds, M.D. Indiana Medical College, Indianapolis, 1876; a member of the American Medical Association; formerly president of the Alton (Ill.) Medical Society; a specialist in diseases of the eye, ear, nose and throat; died at his home, March 7, from kidney disease, aged 57.

James Dow Appley, M.D. Philadelphia College of Medicine and Surgery, 1871; a member of the American Medical Association; local surgeon for the Delaware and Hudson Railroad; died at his home in Binghamton, N. Y., February 18, from valvular heart disease, aged 65.

Clara A. Swain, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1869; for forty years a missionary in India, where she was a pioneer in the establishment of hospitals for women; died at her home in Brookside, Castile, N. Y., Dec. 25, 1910, aged 76.

Marion Augustus Baldwin, M.D. Tulane University, New Orleans, 1866; local surgeon at Cuthbert, Ga., for the Central Railroad of Georgia, and a member of the National Association of Railway Surgeons; died at his home, March 2, aged 78.

William B. Young, M.D. Medical College of the State of South Carolina, Charleston, 1904; of Rockhill; a member of the South Carolina Medical Association; died in the Florence (S. C.) Infirmary, Dec. 20, 1910, from typhoid fever, aged 33.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

PROPRIETARY VERSUS UNPROTECTED NAMES

The Question of Term to be Applied to the Active Principle of the Suprarenal Gland

Some years ago the Council on Pharmacy and Chemistry decided that it was necessary to adopt, in each instance, a generic term to designate those products that are on the market under two or more proprietary names. When it came to the consideration of the various preparations of the blood-pressure-raising principle of the suprarenal gland which were on the market, it was necessary to establish some name that should be common to all of them. The name adopted was "epinephrin." This was selected in part because it was the name under which the preparation was first called to the attention of the profession of this country by Professor Abel, as will be mentioned later. Further, the name is one which is as appropriate for the preparation as any adopted by the various manufacturers, and is, in addition, easily learned. We doubt if any one will deny that the Council on Pharmacy and Chemistry, representing as it does the American Medical Association and the medical profession of the United States, has as much right to adopt a name for the preparation as has any manufacturing firm.

For several years THE JOURNAL has endeavored to follow the unquestionably correct plan of using the scientific name of a drug or medicinal preparation in preference to the coined trade name—the proprietary name given by the manufacturer. After the adoption of the term "epinephrin," THE JOURNAL began occasionally to substitute that term for the proprietary names of suprarenal products in abstracting, but only in instances in which it was evident that the author was using the proprietary name in a general sense. In original articles, however, this was not done without the author's permission. In this way it was hoped that the medical profession would gradually be led to appreciate the fact that there is a common name for the substance. Only one protest has been received, and that from Parke, Davis & Co., a firm which sells the substance under the name "adrenalin." It was as follows:

PARKE, DAVIS & CO. PROTEST

To the Editor:—We wish to protest against the unfair manner in which one of your department editors (Current Medical Literature) is treating us.

When a reputable practitioner reports to the London *Lancet* that "the effects from the treatment of the paroxysms of asthma by the hypodermic injection of adrenalin are marvelous," your department editor is taking an unjustifiable liberty when he changes the word adrenalin to epinephrin. He knows, you know, that there is no such thing on the market as epinephrin, and that Dr. Melland used our product, adrenalin; that over 90 per cent. of all clinical work done with the active principle of the suprarenal gland is done with our preparation, adrenalin, and that it is equally unfair to your readers and unfair to the manufacturer to deliberately substitute any other name—just as wrong as it would be for a druggist to substitute any other product.

In the *Wiener klinische Wochenschrift*, May 12, Dr. Kreibich did not treat of the subject which you put in his mouth. His article was devoted to "Adrenalin Technic for Determination of Leukocytes in Tissues." Do you think it right to put in his mouth a name of which Dr. Kreibich probably never heard in his life?

It is no answer to say that you have given the same treatment to one of our competitors in abstracting an article from the *Deutsche Zeitschrift für Chirurgie*. Dr. Heidenhain undoubtedly never heard of epinephrin. He writes of the behavior of a preparation made by one of our competitors, suprarenin.

We spent tens of thousands of dollars on experimental work before our chemist, Dr. Takamine, isolated the active principle of the suprarenal gland. We now pay him a royalty on every grain of the drug and every ounce of the solution. You know that there is no such thing on any market as epinephrin. And yet you try to deprive us of the credit which is fairly ours. A fine premium you are putting on originality, enterprise and research work by commercial houses! Here we have enriched the practice of medicine with the most remarkable agent discovered since Köhler noted the anesthetic properties of cocain (excepting always the antidiphtheritic serum); yet when a reputable physician reports his experience to the medical press, THE JOURNAL of the American Medical Association deliberately strikes out the name used by the author and substitutes one of its own.

Is this the way to teach ethics to others?

PARKE, DAVIS & CO.,
E. G. SWIFT, General Manager.

This letter was received last June. Immediately after its receipt we began an investigation as to the views of those who use the name "adrenalin" in their printed articles. To this investigation we shall refer again. It is mentioned here to explain why the letter has not been published before.

SCIENTIFIC NAMES A NECESSITY

Aside from the question of priority of discovery, this protest raises a problem much broader and deeper than any question of personal credit or commercial aggrandizement, one which concerns the ethical and scientific status of protected names. In all countries the use of trade names in scientific treatises is discountenanced, and for very evident reasons. Hence a medicinal substance should have a scientific name by which it may be known in literature in contra-distinction to any trade name by which it may be called. This is especially true when a substance is sold under two or more proprietary names.

There are already thirty or forty different trade names for this active principle.[1] There is nothing to prevent a hundred firms or individuals from marketing this substance, each under a different trade name. Can nothing then be done? Are our abstracters to quote each of these one hundred or more names? Is it necessary that a physician use some trade name every time he mentions the substance?

If there were but one product on the market, there might be comparatively little objection to the use of the proprietary name as a generic term. When there are several, however, the adoption of one proprietary name as a generic term for that whole class of products is an injustice to all the other products in that class. Moreover, in the inevitable confusion that results, science is sacrificed to commercialism.

WHAT A BRITISH EDITOR THINKS

Very recently this same point has been discussed in British medical and pharmaceutical circles. In the London *Lancet*, Jan. 7, 1911, p. 73, there was a short note taking the editor of the "Year Book of Pharmacy" to task for substituting a generic term[2] for the proprietary name "adrenalin" in giving an abstract of an article that had appeared in the *Lancet*. Mr. J. O. Braithwaite, the editor of the "Year Book of Pharmacy," in a letter in the *Lancet*, Jan. 28, 1911, p. 264, justifies his course in using a generic term[2] in such cases, on the reasonable ground that it tends "to lessen confusion and to increase accuracy."

After showing how the use of a multitude of names for the same substance tends to degrade scientific work, Mr. Braithwaite stated that to use, in abstracting, a generic word as a "common denominator," did injustice to no one. Rather, says he: "The injustice, if any, arises entirely from the loose manner in which trade names and proprietary euphemisms are applied to these newer remedies. This has caused them as a class to fall into disrepute, and has reflected hardly on the few more valuable therapeutic articles among them . . . Moreover, it is no function of the 'Year Book of Pharmacy,' in its abstracts to advertise either 'preparations' or persons. These abstracts are intended solely to record scientific facts or practical details of use to pharmacists in their calling, or to those who are interested in the subjects with which they deal."

GENERIC TERMS INJURE NO ONE

The introduction of a generic term does not prevent any physician from using the word "adrenalin," or the proprietary name of any other product. If a physician believes a certain brand to be superior, or if he wishes to contribute royalty to the enterprise of the manufacturer, then he is justified in using the proprietary term.

1. Among the proprietary preparations of the suprarenal principle made in the United States are the following: Adnephrin (Frederick Stearns & Co.), Adrenalin (Parke, Davis & Co.), Adrin (H. K. Mulford & Co.), Supracapsulin (Cudahy Co.), and Suprarenalin (Armour & Co.). In Europe among others are: Atrabilin, Chelafrinum, Epirenan, Hemostasin, Hemisine, Ischemin, Paranephrin (Merck), Renoform, Supranephran, Suprarenaden, Suprarenin (Hoechst), Suprarenin synthetic, Tonogen and Vasoconstrictin.

2. The generic term used by the editor of the "Year Book of Pharmacy" is "adrenine."

As a matter of fact, the word "adrenalin" has come into use as a generic name because Parke, Davis & Co. were the first manufacturers to "push" this product. This was done in all countries. The name this firm adopted was a catchy one, and as a result it is a fact that to-day, not only in this country but in Europe, "adrenalin" is regarded as a common name by a host of physicians, and used as such. In our correspondence regarding this matter this statement has been made repeatedly: "I used the term 'adrenalin' because I thought it was the common term."

In this connection, we desire to say that Parke, Davis & Co. are mistaken in asserting that we know that Dr. Melland used their preparation. On the contrary, study of his article shows that he used the word in a generic sense. Whether he used the preparation made by Parke, Davis & Co. or some other preparation is not specified.

"Do you think it is right," ask Parke, Davis & Co., "to put into his mouth a name of which Dr. Kreibich never heard in his life?" We think it right to use the word which will convey the idea to the reader's mind without chance of misapprehension. We think it wrong to use a word which has a double sense, when that can be avoided. Unless an author's words are meant to apply solely to the preparation made by Parke, Davis & Co., it is not right that that product should derive benefit from them.

Say Parke, Davis & Co.: "You know that there is no such thing on any market as epinephrin." This is true, and for the simple reason that every manufacturer, for purely commercial reasons, without regard to science, adopts a trade name for his product and pushes that product under that trade name for all it is worth. But if medical men will make it a point to use the word epinephrin in their discussions, in their writings, and in their prescriptions, it will not be long before there will be plenty of epinephrin on the market. As a matter of fact, already one firm (Mulford & Co.) has used as a synonym for its preparation, adrin, the term "epinephrin" and two other firms have expressed willingness to adopt epinephrin as a synonym. We sincerely hope that in the interest of science other manufacturers will do likewise, although it may be too much to expect that all will take this enlightened attitude.

COMMERCIAL PREPARATIONS NOT IDENTICAL

It is understood, of course, that the preparations on the market are not necessarily identical, since the drug is in solution, and these solutions vary according to the preservative and the solvent used.[3] On this account some physicians will find it more satisfactory to use this or that firm's product, in which case they would of course indicate it either by appending the firm's name after the common term "epinephrin," or by using the firm's trade name.

In view of the fact that the name "adrenalin" has been trademarked by the manufacturers of this particular product and is, therefore, no longer the scientific name for the suprarenal principle, the question of priority in its discovery or preparation is one of minor importance in this connection. However, the history of this drug disproves the claim of the manufacturers of "adrenalin" of exclusive priority in the discovery. The progress of scientific discovery is rarely such that any firm or individual can truly claim all the credit.

But before going into the history let us again quote from the Parke-Davis letter:

> We spent tens of thousands of dollars on experimental work before our chemist, Dr. Takamine, isolated the active principle of the suprarenal gland. We now pay him a royalty on every grain of the drug and every ounce of the solution. You know that there is no such thing on any market as epinephrin. And yet you try to deprive us of the credit which is fairly ours. A fine premium you are putting on originality, enterprise and research work by commercial houses! Here we have enriched the practice of medicine with the most remarkable agent discovered since Köhler noted the anesthetic properties of cocain (excepting always the antidiphtheritic serum); yet when a reputable physician reports his experience to the medical press, THE JOURNAL of the American Medical Association deliberately strikes out the name used by the author and substitutes one of its own. Is this the way to teach ethics to others?

How much Parke, Davis & Co. spent on the experimental work that resulted in Takamine isolating "adrenalin" is a matter best known to that firm. The following quotation from the article[4] by Takamine in which he announced the results of his work is interesting in this connection:

> "Having been interested in this subject for some time *I recently commenced* to make research along that line. I am now pleased to announce that *I have succeeded in isolating the blood-pressure-raising principle* of the gland in a stable and pure crystalline form." [Italics ours.—ED.]

If Takamine isolated "adrenalin" so soon after commencing his research work, one wonders why it was necessary for Parke, Davis & Co. to expend "tens of thousands of dollars" for such a rapid piece of work. But this point is immaterial. The implication here is that Parke, Davis & Co. deserve the sole credit for the discovery of the active principle of the suprarenal glands. Now for the facts regarding this matter.

THE HISTORY OF THE DISCOVERY

More than half a century ago it was discovered that the suprarenal glands contain substances which give peculiar color reactions.[5] These properties were believed to be due to the presence of pyrocatechin or to its derivatives. Since 1894[6] it has been known that extract of the suprarenal glands possessed remarkable blood-pressure-raising and local astringent properties.

The blood-pressure-raising principle of the suprarenal gland was first isolated by Abel and Crawford[7] in 1897 in the form of its benzoyl compound. Finding this substance and its derivatives to be physiologically active, Abel believed that he had isolated the true active principle of the suprarenal gland in a pure state and named it "epinephrin,"[8] meaning, of course, that the name should apply to the true blood-pressure-raising constituent. The soluble salts of epinephrin, as prepared by Abel would, no doubt, have met all the needs of practical medicine if his methods of preparation had not been too expensive.[9]

Contemporaneous with Abel's earlier researches, v. Fürth[10] succeeded in isolating from the glands in an impure state an active principle which he called "suprarenin." In 1901, four years after Abel's first report, Takamine,[11] separated an active principle from the glands which he called "adrenalin." In the same year, Aldrich,[12] a former associate of Abel, independently produced an active principle, said to be much purer than Takamine's, which he also called "adrenalin." That Aldrich's product was purer than Takamine's is shown by a comparison of the formulas given by the respective authors. Takamine originally stated that the formula for his adrenalin was $C_{10}H_{15}O_3N$, while Aldrich (from the analysis of his own product) assigned the formula $C_9H_{13}O_2N$. Aldrich's formula has since been confirmed by many independent investigators, while no one has ever been able to substantiate the formula originally claimed by Takamine. This fact alone demonstrates that Takamine can have no legitimate claim to be the first to isolate the active substance in a pure state.

It is evident that all these investigators were working with the same substance, in varying degrees of purity. In fact, with the exception of mentioning v. Fürth's name, this is the belief of Crawford.[13] Abel's early associate. This opinion, however, was written by Crawford, a decade after his work with

3. There is on the market a synthetic product called L-suprarenin synthetic bitartrate. See THE JOURNAL A. M. A., Jan. 14, 1911, p. 120. Also N. N. R., 1911, p. 82.

4. Therap. Gaz., 1901, xxv, 222.
5. Vulpian: Compt. rend., 1856, xliii, 663.
6. Oliver and Schäfer: Jour. Phys., Proc. Phys. Soc. p. i., 1894, xvi; Proc. Phys. Soc. p. i., 1894, xvii; 1895, xviii, 230.
7. Abel and Crawford: Johns Hopkins Hosp. Bull., 1897, viii, 151.
8. Abel: Ztschr. f. phys. Chem., 1899, xxviii, 320-1.
9. Hunt: Proc. Am. Physiol. Soc. in Am. Jour. Physiol., 1901, v, 6.
10. v. Fürth: Ztschr. f. phys. Chem., 1898, xxiv, 142; 1898-9, xxvi, 15.
11. Takamine: Am. Jour. Pharm., 1901, lxxiii, 523.
12. Aldrich: Am. Jour. Physiol., 1901, v, 457. The work of Aldrich was published in the same year, but after that of Takamine. He used the name adrenalin also. The statement that Aldrich's product was purer comes from Crawford, now Professor of Pharmacology in Leland Stanford Junior University, California, formerly with Parke, Davis & Co. This statement was published by Crawford in the Bulletin of the Bureau of Plant Industry, No. 112, 1907, p. 16.
13. Crawford: U. S. Dept. of Agric., Bur. Plant, Ind., Bull., 1907, cxii, 10.

Abel. Jowett, in England, several years earlier had come to the same conclusion.[14] He says: "'Epinephrin,' 'suprarenin' and 'adrenalin' refer to the same substance." Concerning the proper name for the active substance of the suprarenals, this chemist says: "As this author (Abel) was the first to isolate the substance, although in an impure condition, it would seem that the name originally assigned by Abel, to the active principle, should be the one adopted."

A review of the facts as briefly stated above shows that Abel's reports as well of those of v. Fürth were published in 1897-99, long before Takamine's announcement of the isolation of "adrenalin." To Abel, then, more than to any other, belongs the credit of having paved the way for the perfection of epinephrin. As we stated before, therefore, the name which he selected for the substance is the scientific one, the only proper one, if for no other reason than on account of the priority of his systematic researches. We contend, therefore, that "epinephrin" is the most correct generic name for the suprarenal principle and that the Council on Pharmacy and Chemistry did well in selecting this term.

SOME OPINIONS

To ascertain whether authors in speaking of "adrenalin," always mean the Parke Davis preparation, or whether they generally intend a wide application, we entered into correspondence with those who mentioned the word "adrenalin" in their articles, and we quote from some of the replies (italics ours):

Dr. Edward B. Bigelow, Worcester, Mass., says:

Personally, I do not intend to use trade names or write prescriptions for proprietary preparations, although, occasionally, I must admit that I do the latter. *As a matter of fact, through ignorance, I used the word "adrenalin," considering it to be the general term for the preparation* and not knowing, until you called my attention to it, that epinephrin is that term. On looking the matter up, the preparation really used by me was "supracapsulin." I shall be pleased to substitute the word "epinephrin" where I used the word "adrenalin."

Dr. E. Fletcher Ingals, Chicago, in discussing a paper in the Section on Laryngology and Otology last June, spoke of using adrenalin. In reply to our letter he says:

I used the term in a general way, for I seldom use adrenalin as it is too irritating in consequence of chloretone, but use suprarenalin. . . . Your plan is absolutely right and I hope the profession will see it in this way. I shall probably continue to use Armour's preparation, suprarenalin, as I like it best, but we will call it epinephrin.

Dr. Rudolph Matas, New Orleans, says:

In using the term "adrenalin" I was familiar with the fact that there are several preparations of the same kind under different proprietary names; but, remembering the early work of P. D. & Co. in developing adrenalin among other cruder products of the suprarenal gland, I have clung to them faithfully up to the present time. However, in applying the term "adrenalin," as I have done, especially in our work on local anesthesia, *it was not my intention to specify any particular "makes" of suprarenal product* in preference to any other, but *I meant to use it in a generic sense* without meaning particularly P. D. & Co. in preference to Mulford, Armour & Co., Stearns, etc. I did not have in mind the trade name, but a generic name that applied to the product of the adrenal, which we all recognize as the same thing under various trade names. I see clearly the point you make and believe it is well taken. I am fully in accord with the purpose and the principle upheld by the Council on Pharmacy in doing away with trade names, if possible, but those of us who have been in the habit for years of designating certain things by certain names which are familiar to us find it difficult to break into a new practice.

Dr. John O. Roe, Rochester, N. Y., replied:

As stated in my article, *it was adrenalin I used in the cases I reported.* I have no objection to the use of the general or generic term covering all the different preparations of this agent, although I stated that I used adrenalin for the reason that I have found it the most active and the most reliable of all these preparations.

Dr. Leo Loeb, St. Louis, says:

I have no objection to the change you propose in my paper. *I am glad to use the term "epinephrin" instead of "adrenalin."* I am in hearty sympathy with the work done by the Council on Pharmacy and Chemistry.

Dr. A. L. Scharber, Nashville, Tenn., says:

I did not intend to use any trade name; *I only used it in a general way.* I thought at the time that I had applied the name as it should be. Now, if I had known in time, I should have substituted the word "epinephrin" for "adrenalin."

Dr. Theodore C. Janeway, New York, writes:

I am heartily in sympathy with your desire to eliminate trade names. *In this case it was P. D. & Co.s preparation.* . . . It seems to me unfortunate that adrenalin, which is used fairly generally in the German literature, should not have the same non-specific signification here, but suppose we cannot help that. Epinephrin always seemed to me a much clumsier name than adrenalin. However, I suppose P. D. & Co. have made it impossible to use the latter.

As stated by Dr. Janeway, "adrenalin" is used as a general term in a general sense in Germany, and in fact all over Europe, as it is in this country, and for the same reason. Thus, to quote only recent literature, Ascher and Flack (*Ztschr. f. Biol.*, 1910, Vol. 55) use the word "adrenalin" throughout their article, in the protocols and conclusions; but on page 115 they state that they actually employed the preparation "hæmostasin." Hirayama (*Ztschr. f. exper. Path. u. Ther.*, 1911, Vol. 8, p. 651) speaks of "adrenalin experiments," but actually used "suprarenin Hoechst" in all cases. This illustrates the generic use of the term. But while the substance is on the market in Europe under a greater variety of names than it is in this country, adrenalin has the same narrow, limited meaning as it does here. Parke, Davis & Co. emphasize this even in their advertisements. In a full page advertisement in the London *Lancet* recently the British profession is advised that "there is only one adrenalin. . . . Parke, Davis & Co. introduced adrenalin into medicine. This principle was isolated in 1900 by Dr. Takamine, a member of their scientific staff, and the sole right of manufacture by his process is vested in them." German physicians are laboring under the same difficulty as physicians in this country would be laboring under were it not for the Council on Pharmacy and Chemistry.

We believe that the patent on adrenalin will expire in five or six years. Then not only the method of manufacturing it but the product itself will be free. But Parke, Davis & Co. will still control the name "adrenalin," and every time the physician prescribes under this term the druggist must use Parke, Davis & Company's preparation.

In scientific literature, however, or whenever the observations or conclusions are not restricted to the Parke, Davis & Co. product, the name "epinephrin" is not only justified, but commendable. The very condition of scientific progress is freedom. The interest of the public and of science demands that this freedom should be maintained. We doubt greatly whether many scientists of established reputation will subscribe to the insinuation in the protest quoted above, that the cause of science is best advanced by restricting its liberty, in order to put a premium on the "originality, enterprise and research work of commercial houses."

Such an attitude would certainly be contrary to the best traditions of medical science. Modern conditions may have necessitated some changes in the traditional practice—but not to the extent that thinking men will agree with the accusation that those who prefer a free name to a "protected" name, are guilty of sophistication and of debauching the ethics of the profession.

PARKE, DAVIS & CO.'S "REPLY" TO THE ABOVE WITH OUR COMMENTS

With a desire to be absolutely fair and to avoid any possible misstatements of facts, a proof of the above was submitted to Parke, Davis & Co. This firm has made a rather lengthy "reply," which ignores the main point—the absolute necessity, in the interest of science, of a practical, generic name—but deals expansively with side issues, especially in extolling their own product. The reply absolutely ignores the point at issue. As will be noticed by those who read the "reply" through consecutively, it contains many reiterations. A slight rearrangement of the paragraphs has been made, therefore, in order that we may comment in one place on related matters. As the paragraphs are numbered, it will be

14. Jowett: Jour. Chem. Soc., 1904, lxxxv, 192.

easy for those who desire to do so to read Parke, Davis & Co's "reply" in the order in which it was sent in by them. Omitting the first paragraph, we have arranged the text of the reply under four heads. Their "reply" begins as follows:

To the Editor:—On the following points in the article which you send us, "Proprietary versus Unprotected Names," you take a position which is utterly untenable:

1. Not a single grain of the active principle of the suprarenal gland was on the market, in pure state or in solution, until Parke, Davis & Co. first offered the pure adrenalin and the solution adrenalin chlorid to the medical profession and the drug trade. That we were the first to offer these products for sale has never been disputed.

Comment:—Technically this is true. Nevertheless, under the name "epinephrin," an active principle of the suprarenal gland, as prepared by Abel, was in the hands of clinicians, in the form of a salt and in solution, and was being made the subject of experiment and report to medical societies nearly two years before Parke, Davis & Co. offered it for sale.

I. VARIATIONS IN COMMERCIAL BRAND

2. If you will turn to Bulletin 61 of the Bureau of Public Health and Marine-Hospital Service at Washington, you will find on page 25 a summary of an investigation of six preparations on the market purporting to contain the active principle of the suprarenal gland. In point of activity four of them range from 3.7 to 66.6 per cent. of the normal standard. Only two are pronounced satisfactory (100 per cent.). If you purpose to encourage the use of the generic name for the six preparations, and if a physician prescribe epinephrin, which of the six products would you have dispensed on his prescription—the active, the standardized or the virtually inert? Would you leave the decision wholly to the dispenser? Would you give the physician any voice in the selection of the product that he can trust? And if in your dislike of "trade names" you persist in closing your columns to them and in substituting epinephrin therefor, will you, in justice to the physician and in justice to the particular product which may have been used by your contributor, take the trouble to insert "epinephrin (Jones)," or "epinephrin (Smith)," or "epinephrin (Parke, Davis & Co.)?"

Comment:—This matter has been dealt with (page 911, col. 1, par. 5), in part, as follows: "It is understood, of course, that the preparations on the market are not necessarily identical, since the drug is in solution, and these solutions vary according to the preservative and the solvent used. On this account some physicians will find it more satisfactory to use this or that firm's product, in which case they would, of course, indicate it either by appending the firm's name after the common term 'epinephrin' or by using the firm's trade name."

The introduction of a generic term does not prevent any physician from using the word 'adrenalin' or the proprietary name of any other product. If a physician believes a certain brand to be superior, or if he wishes to contribute royalty to the enterprise of the manufacturer, then he is justified in using the proprietary term.

We have no complaint against the use of a trade name when the prescriber, author or abstracter intentionally restricts his remarks to that one particular preparation, as in the comparative investigations quoted in the reply. But as we have pointed out, practically all authors intend to use a generic name, and think that they are doing this.

3. Allow us to remind you of your own words in THE JOURNAL of the American Medical Association, Feb. 26, 1910, page 710:

"Schultz has just published the results of a careful examination of samples of the suprarenal preparations on the American market, which illustrated once more the need of more care in the methods of preparing and keeping this important drug. Of the six different products only two were of the strength claimed; the others vary from 3.7 to 66.6 per cent. of this strength. . . . Hunt in 1906 showed that some of the preparations labeled 1:1,000 had only one-fifth of the activity of others bearing the same label. Sollmann and Brown of Cleveland, Ohio, showed the activity of eight commercial preparations to differ greatly. . . . The fact remains, however, that inferior preparations are on the market and are probably passing into the hands of physicians daily. . . . There are reasons for believing, however, that some of the firms preparing this and some other drugs requiring physiologic standardization are not properly equipped for the work."

If, now, the physician prescribes simply "epinephrin," what ground has he for complaint if a solution containing 3.7 per cent. of proper normal potency is dispensed?

5. Those manufacturers who are making substitutes for adrenalin will rejoice to know that an influential medical journal is supporting their attempts to destroy in the minds of physicians the distinction between their products and the original. No wonder that one or more of them have been willing to accept your suggestion and attach the word "epinephrin" to their labels! Why should they forego your help in rectifying their past failures to give standing to their imitations and substitutes?

Comment:—We are not aware that there is any "distinction," other than the variability which may exist between any two commercial brands of the same substance. This variation is unfortunate, and should be speedily abolished by the standardization of *all* the brands—a work which the Council on Pharmacy and Chemistry is trying to accomplish. Instead of this, Parke, Davis & Co. propose to meet the conditions by creating and perpetuating a monopoly.

To realize the absurdity of this, we need only consider a few analogous examples: Common table salt is not absolutely pure. Let us suppose that a commercial firm markets a pure sodium chlorid under a protected trade name. Must scientists henceforth drop the scientific name of "sodium chlorid" or the public the common name "salt," because uniformity would be promoted thereby? Again: Digitalis preparations vary notoriously. Let us suppose that Smith, Jones & Co. invent a more uniform preparation and incidentally also invent a new name. Should the name "digitalis" now be dropped from the literature, because it refers to variable products? Or again, let us now suppose that we now accomplish the impossible and accept "adrenalin" as the generic name; must we change this every time that some one finds a better way of making a somewhat purer product, or a more stable solution? Parke, Davis & Co. bring another argument along the same line:

7. Your own laboratory (THE JOURNAL A. M. A., Oct. 31, 1908, pp. 1524-25), has borne witness that of four samples (of preparations purporting to be solutions of the active principle of the suprarenal gland) only one did not contain sodium sulphite or a similar bleaching agent—an agent which is generally conceded to have no real preservative effect, and only serves to deceive the physician by masking the tell-tale evidence of decomposition. We do not ask you to publish the name of the manufacturer of the lone sample: we can guess for ourselves.

Comment:—We do not know at all that "it is generally conceded" that the sulphite has no real preservative action and is therefore a fraud; or that the infinitesimal dose used is at all harmful; or that it is in any way inferior to the preservative used in "adrenalin solution." In the absence of any evidence in this direction, the Council had to be content with a statement of the nature of the preservative; but if good evidence is adduced, the Council will doubtlessly apply it.

II. EXPENSE OF DISCOVERY

Parke, Davis & Co. lay great stress on the matter of the expense of discovery in the following paragraphs:

4. The relative merits of Takamine and Aldrich, on which you dwell, have no bearing on the case. Both were in our employ during and before their work on the suprarenal gland. Aldrich entered our service July 10, 1898, and devoted more than two years to this work. Takamine had the good fortune to reach the coveted goal first. With either or both, Parke, Davis & Co. share the credit, for obvious reasons.

6. Much is said of the selfish motives and the pecuniary rewards of the manufacturer, little or nothing about his outlay, his financial hazard, his losses. Few remedies of real value are brought forth in this era save by highly trained and well-paid men working in costly laboratories. The world hears of the success, applauds the discoverer (perhaps), and utilizes the remedy. No one thinks it worth while to ascertain the costly failures, for the failures cost as much as the successes, and the returns from one success must necessarily offset the losses of a half dozen failures.

Comment:—Just when, where and how long Drs. Takamine and Aldrich were in the employ of Parke, Davis & Co.; what were their salaries and other conditions of their employment; what proportion of their time was devoted to investigations of the suprarenal problem; what other use may have been made of them—or in fact, what were the expenses of Parke, Davis & Co. in discovering adrenalin, and the probably vastly larger expenses of advertising it, what is the present rate of profit, etc.—all these are questions which may have an interest of their own; but we fail to see what practical bearing they have on the question whether we need a generic name for the numerous commercial brands of an identical substance; or even on the choice of name, since the Parke, Davis & Co. name is protected, and therefore not available as a generic name.

In passing, however, it may be remarked that so far as the mere question of expense is concerned, Takamine and Aldrich, and through them Parke, Davis & Co., certainly profited somewhat by the work of the preceding and contemporaneous workers in the same field; but we have still to learn that they have made any efforts to reimburse these "outsiders" for their share of the expense. In the aggregate, this was doubtless much greater than that of Parke, Davis & Co. The independent workers were not looking to financial encouragement; they were looking to the benefit of mankind; they are entitled to *that* benefit, and presumably would not accept any other. Parke, Davis & Co., however, would take this benefit from them, capitalize it, and convert it into dividends. These independent investigators doubtless believed, as we have said, that they were working for the benefit of humanity; it appears, however, that they were, in fact, working for the exclusive benefit of Parke, Davis & Co. This is one of the unfair phases of commercialized research.

III. PRIORITY OF DISCOVERY

As we have repeatedly pointed out, the "priority of discovery" has no practical bearing on the need, or in this case even on the choice, of a generic name; for a generic name, by its very definition, cannot be monopolized, and "epinephrin" is the only current name for the substance which has not been monopolized. It was not even proposed for any specific product, for Abel said: "I therefore name the blood-pressure-raising substance (of the suprarenal gland) 'epinephrin,' in accordance with Hyrtl's nomenclature" (*Hoppe-Seyler's Ztschr.*, 1899, xxviii, p. 321).

However, since Parke, Davis & Co., in their first letter, claimed to have "enriched the practice of medicine with the most remarkable agent," etc., we felt it our duty to point out that such a claim deprives Dr. Takamine's predecessors of the large part of the credit which is fairly theirs. The "enrichment" really dates from the discovery, by Oliver and Shäfer, of the vasoconstrictor action of the gland, which led to its therapeutic use. Had it not been for this demonstration of the therapeutic potentialities of the gland, Parke, Davis & Co. would probably not have dreamed of financing its investigation. For this then they deserve no credit. The next step was the demonstration that this action resides in a definite chemical substance; and this substance, in the form of a benzoyl derivative, was first isolated by Abel—also without the aid of Parke, Davis & Co. Had it not been for the demonstration of the basic character of this substance, Dr. Takamine might still be floundering in the dark for a process of isolation.

The next step was the isolation of the natural base, and the credit for this, we say without hesitation, belongs to Takamine, Aldrich and Parke, Davis & Co. This was followed by the determination of the structural formula; and finally by the synthesis of the substance. In the last, Parke, Davis & Co. again had no share. In such a chain of discoveries, is it right for anyone to claim exclusive credit; to imply that he alone has enriched the profession? Is it possible even to say who should have the major share? We do not believe so, and we shall not attempt it. We concede a fair share to Parke, Davis & Co., namely, the final isolation of the natural base. We do not blame them for speaking warmly on this point, nor even for some partiality to their own merits; and therefore we shall comment only on such of their statements as are distinctly unfair to other investigators, hence, subdivisions a to f, inclusive, of paragraph 8 are not commented on, while subdivisions i, j and k are discussed separately.

8. (a) You do us and our employees an injustice in the language which implies that Professor Abel was mainly responsible for the discovery and preparation of the pure, active principle of the suprarenal gland. Abel was not the first to learn that this gland contained some substance giving a peculiar chemical (color) reaction. This was demonstrated by Vulpian (*Compt. rend. Acad. d. Sc.*, Paris, 1856, xliii, 663-665) in 1856 and confirmed by Virchow (*Virchow's Arch. f. path. Anat.*, 1857, xii, 481) in 1857. He was not the first to believe that these glands contained some active principle, because Vulpian and Cloez (*Compt. rend. Acad. d. Sc.*, Paris, 1857, xlv, 340) in 1857, and Arnold (*Virchow's Arch. f. path. Anat.*, 1866, xxxv, 64) in 1866, and Holm (*Jour. Pract. Chem.*, 1867, c, 150) in 1867, had arrived at the same conclusion, as is shown by their attempts to isolate such an active principle.

(b) He was not the first to demonstrate that these glands contained a substance of undoubted chemical similarity to another well-known substance, for Krunkenberg (*Virchow's Arch. f. path. Anat.*, 1885, cl, 542) in 1885 called attention to the similarity between the color reactions of the extract of this gland and those of pyrocatechol. Also, Brunner (*Schweiz. Wchnschr. f. Pharmakol.*, 1892, xxx, 121) in 1892 confirmed Krukenberg's conclusions in reference to the similarity between the color reaction of some substances in the glands and those of pyrocatechol.

(c) Abel did not first demonstrate that these glands contained a substance of marked physiologic activity, for Oliver and Schäfer (*Jour. Physiol.*, 1894, xvi, 1; 1895, xviii, 230) in 1894 made the important discovery that the extract from the suprarenal glands produced a rising blood-pressure when injected intravenously. Moreover, Moore (*Proc. Physiol. Soc.*, London, xiv; *Jour. Physiol.*, 1895, xvii) in 1895 discovered that the reducing property in such an extract went hand in hand with the ability to increase the blood-pressure, and he also concluded that the physiologically active body must be identical with the reducing body which gives a green color reaction with the iron salts.

(d) In 1896 Fränkel (*Wien. med. Bl.*, 1896, xix, 207, 228, 246) purified the extract of the glands until he had obtained a syrup-like body, and he, like Abel, with equal reason, considered this to be a pure substance. He called it "sphygmogenin," but no evidence was offered to demonstrate its purity or identity. In the light of our present knowledge we, of course, know that it was not the active substance, though it undoubtedly contained some of the active substances.

(e) Mühlmann (*Deutsch. med. Wchnschr.*, 1896, xxii, 409) in 1896 made a chemical investigation and arrived at the conclusion that the active principle was pyrocatechol. This, of course, we now know to be untrue also.

(f) Moore (*Jour. Physiol.*, 1897, xxi, 383) in 1897 argued that Fränkel was wrong in assuming the active principle to be a derivative of pyrocatechol, and argued that it was a derivative of pyridine. The error of this conclusion has also been demonstrated; nevertheless, Moore's work was important, very interesting and creditable.

(g) Abel and Crawford (*Bull. Johns Hopkins Hosp.*, 1897, viii, 151) in 1897 published results which showed that they had been carrying on a very interesting series of chemical researches on the active principle, but a careful perusal of the papers published at this time, and also in 1898 and 1899, and, in fact, a perusal of all the papers which have emanated from Professor Abel, has demonstrated that he never did succeed in isolating the active substance in pure form, but that what he did obtain and what he did regard as the active principle and the substance to which he has given the name of epinephrin, was really a compound which was not the active principle itself, but which contained more or less of the active principle, and which consequently displayed some of the peculiar physiologic activity of this substance. Aside from the greater complication of the work, and perhaps the more highly scientific methods used, he really accomplished little more than did Fränkel in 1896, or perhaps Oliver, Schäfer and Moore, who made an extract from the glands and proved it was possessed of peculiar chemical and physiologic activity. More than this, the work which he did and the results which he published were not finally used by Drs. Takamine, Aldrich, von Fürth or Pauly as the basis of a method for the extraction and purification of the active principle. Without the independent labors and discoveries of these other men or others equally as able and fortunate, it is quite possible that the active principle of the suprarenal glands in a pure and concentrated condition would not be available to the medical profession to-day.

(h) If Abel has ever succeeded in extracting the pure active principle, even up to the present day, without taking advantage of the information developed by Takamine and others, we have seen no evidence of it in the scientific journals. There is no doubt that Abel was convinced that these glands contained some substance possessing high physiologic potency; in fact, he could not have avoided such a conclusion from the information furnished by others, and one might perhaps say with all justice that he assigned the name epinephrin to the substance which he imagined was present in the glands, but his conclusions as to the constitution of this substance, and the methods which he developed for its extraction and purification, have been overthrown by others and are not accepted to-day by his scientific colleagues.

Subdivisions i j and k are commented on below.

(*l*) No less than four formulas for the active principle of the suprarenal glands have been proposed by Abel from time to time. Even if we agree to adopt the last of these, one cannot avoid the fact that this has been proved beyond any doubt to be an incorrect formula for the active principle. It would certainly do violence to scientific usage, and be a distortion of the truth, therefore, to apply this name "epinephrin" to a substance now known as "adrenalin," which has a different chemical constitution.

Comment:—In justice to Abel, it should be said that he conceded that he had not isolated the natural base, but its benzoyl salts. These, however, he evidently had in a practically pure form—as pure as Takamine's original products. In evidence, we need only quote Aldrich, and therefore Parke, Davis & Co. themselves: "It is interesting to note in this connection that if we subtract a benzoyl residue from Abel's formula for epinephrin—$C_{17}H_{15}NO_4$—we obtain a formula—$C_{10}H_{10}NO_3$—which is not very far removed from that of adrenalin—$C_9H_{13}NO_3$—a difference that can be readily explained if we suppose either of these bodies to be contaminated with other bodies." (*Am. Jour. Physiol.*, v, p. 461). As to the matter

of formulas, it must be remembered that the time when Abel worked on the problem, the subject was scarcely ripe for final judgment. Every chemist understands that the earlier formulas are more or less provisional. A criticism on this score is scarcely fair, least so from the champions of Dr. Takamine; for *the formula of Takamine has shared the same fate as Abel's.* In fairness, it should also be stated that the four formulas which excite the derision of Parke, Davis & Co., were not all for one and the same thing.

Parke, Davis & Co. then quote the opinions of several investigators:

(i) Professor Pauly (*Ber. d. deutsch. chem. Gesellsch.*, 1903, xxxvi, 2944), a man of world-wide reputation, writing from the laboratory of the University of Bonn, says:

"The credit of first precipitating and isolating from the suprarenal gland of the therein contained blood-pressure-raising principle as a chemical individual belongs to Takamine. It has the name 'adrenalin,' given to it by its discoverer, which name, among the many trivial names given to it, possesses the best scientific claim."

(j) Professor von Fürth (*A. d. Sitzungsb. d. k. Akad. d. Wissensch. in Wien. Mathem-Naturw. Klasse*, 1903, cxii, 3) says in this connection:

"Abel and his pupils employ the name of epinephrin to designate the active principle as contained originally in the gland, instead of adrenalin or suprarenin. As the substance described and analyzed by Abel under the name epinephrin is certainly different from the original body in the adrenal glands, I shall avoid using the same, since it necessarily leads to a misunderstanding."

(k) In a second paper Pauly (*Ber. d. deutsch. chem. Gesellsch.*, 1904, xxxvii, 1388) emphatically rejects Abel's empirical formula, $C_{10}H_{13}NO_3\frac{1}{2}H_2O$, and remarks:

"This formula, together with the name 'epinephrin hydrate,' which designates the same, should be blotted out of the literature. The name 'epinephrin,' however, should remain now as before for the basic substance obtained by treating adrenalin with concentrated H_2SO_4, or with dilute acids under pressure, and to this the formula $C_{10}H_{13}NO_3$ should be given. This body, whose chemical composition is different from adrenalin, and whose physical, chemical and pharmacologic properties are different from the real blood-pressure-raising substance, should be considered a transformation product of the active principle."

Pauly adds that Jowett is mistaken in giving Abel and Crawford credit for the priority in first isolating the active principle:

"Thus there can be no doubt that not Abel and Crawford, but Takamine first obtained the active substance. If Abel adheres to the statement referred to in the beginning, that his formula $C_{10}H_{13}NO_3\frac{1}{2}H_2O$ finds confirmation in the analyses of salts and derivatives, it must be answered that this is not the case; that he, outside of one impure benzoyl product, has not prepared, not to say analyzed, up to the present time, either a salt or derivative of adrenalin, in which the nucleus of the last is still intact."

Comment:—These are altogether matters of opinion or point of view, and to appraise them, it should be understood that Pauly, at the time when he wrote them, was engaged in a somewhat sharp controversy with Abel, as might be gathered from the expressions quoted. His views, therefore, would be apt to lack perspective, in fact, they would tend to be somewhat biased. Incidentally, Pauly is not a professor but a privat docent at the University of Würzburg and can hardly be said to be a "man of world-wide reputation as a chemist." As to von Fürth's statement, there can no longer be any fear of a "misunderstanding."

Parke, Davis & Co. proceed:

(m) Abel's epinephrin possessed little if any blood-pressure-raising action (von Fürth: *Ztschr. f. physiol. Chem.*, 1900, xxix, 122). Abel never succeeded in producing the crystallized base until he learned how from Takamine. The one point on which Abel (*Bull. Johns Hopkins Hosp.*, March, 1901, xii, 80) at first agreed with von Fürth (most erroneously, as it proved) was that "the active principle in its native state is not precipitated by ammonia." Not only was this single point of agreement exploded by Dr. Takamine's discovery, but singularly enough Abel's statement of the error was made in the same article of May, 1903, in which he acknowledged receipt of the Takamine crystalline base, of which he then did not know the process of making. In other words, Abel never succeeded in producing the crystalline preparation of the blood-pressure-raising principle until Takamine taught him how by a method which he and von Fürth had pronounced impossible! Abel remarks later (*Ber. d. deutsch. chem. Gesellsch.*, 1903, xxxvi, 1839): "The important observation that the substance can be precipitated in crystalline form from concentrated gland extracts by the aid of ammonia and other alkalies we owe to Takamine." Nothing could be more explicit.

Comment:—As to the ammonia-precipitation, the fact that Takamine succeeded where Abel and von Fürth had failed, proves that Abel was wrong in this particular, as he concedes in the quotation. Abel fell into this error because his gland solutions were too weak; he had, however, discovered the ammonia-precipitation in the case of his isolated substance, and the basic nature of the latter long before a report of Takamine's work was published. (*Hoppe-Seyler's Ztschr.*, 1899, xxviii, 324.)

The statement that "Abel's epinephrin never possessed any blood-pressure-raising action," is a wholly inexcusable misrepresentation, to put it mildly. Abel stated that his free base soon lost its activity, but the salts, especially the picrate and bisulphate, were highly active, and in the dry state retained their activity. These active salts, as epinephrin bisulphate, were always prepared by transposition from a picrate and not from the free epinephrin which became inactive presumably by oxidation during the precipitation. The curves in the paper of Abel and Crawford (*Johns Hopkins Hospital Bull.*, 1897, viii, 151) were absolutely convincing. In the paper in *Hoppe-Seyler's Zeitschrift*, xxv, Abel found that 0.02 mg. of the salt per kilo of animal gave a distinct rise; and that larger doses raised the pressure by 88 mm. On p. 349, he also describes the blanching effect on the conjunctiva. The writer of the "reply" is evidently familiar with these papers and his misstatement of the case must, therefore, be intentional, especially since he admits in a former paragraph (g), that Abel's epinephrin "displayed some of the peculiar physiologic activity of this substance" (the active principle). Nor does this writer anywhere intimate that Abel has replied in detail to von Fürth's contention that epinephrin and suprarenin (the name adopted by von Fürth for the active principles of the suprarenal gland, now a "trade" name) are fundamentally different substances. (See Abel, *Johns Hopkins Hospital Bulletin*, March, 1901, and *American Journal of Pharmacy*, July, 1903.)

IV. SUMMARY

Parke, Davis & Co., conclude their reply as follows:

(n) Far be it from us to pretend that our research workers were not greatly indebted to other pioneer students of the suprarenal gland, or to deny that the work of a number of earnest investigators had paved the way for Takamine's crowning achievement. Nearly every great invention or advance in every art is thus made possible. Pasteur made Lister possible. Is this any disparagement of Lister? Because there was a prior record of research, are we to be robbed of the credit which is justly due us for being the first, through our employees, to separate the active principle in its pure state, to determine its constitution, to evolve a practical method of production on a commercial scale, to confer a remarkable boon on suffering humanity? Is the inventor of a therapeutic agent to be discriminated against? Has society a greater stake in an improved broom-handle than in a valuable drug? Nay, of all inventions, should not the author of a new remedy be singled out for the richest rewards that society can confer? Will Professor Ehrlich be any the less a great benefactor of his race if he reserves for himself or for his institute in Frankfort a large royalty on his wonderful salvarsan? If we have done nothing for medicine and humanity in this matter of adrenalin, your argument is sound. If we have done much, your position is pitiful and wrong. And, worst of all, the very men whom you profess to serve—the medical practitioners of the country—will be the first to suffer. The more you encourage the use of the blanket name "epinephrin," the more you put the physician at the mercy of "thirty or forty" different manufacturers whose products range in value from the worthless to the best.

PARKE, DAVIS & CO., Detroit.
By E. G. SWIFT, General Manager.

Comment:—We commend the spirit of the first sentence. For the rest, we need only restate the principle at issue, which Parke, Davis & Co. have seen fit to ignore entirely in their reply: When the same substance is actually marketed and used under several distinctive trade-names, it becomes necessary to use a generic name when speaking of properties of the substance which are common to all "brands." This is the intent of most scientific and medical writers on the suprarenal base, and when the word "adrenalin" is used by medical writers, it is generally meant in the generic, and not in the distinctive sense. Since the name "adrenalin" is protected, it should not, and properly cannot, be used in this way. The name "epinephrin," since it is not monopolized, is not only the best, but also the sole name which can be rightly applied to the suprarenal base, in the generic sense.

Correspondence

Rheumatism, Specialism and Independent Journalism

To the Editor:—I saw a very timely letter in THE JOURNAL, March 11, 1911, inquiring why reputable physicians and surgeons will contribute articles to medical journals which admit a very undesirable class of nostrums and proprietaries to their advertising. As I frequently contribute to several independent journals, some of whose advertisements I do not approve of at all, I will say that I do it in order to reach the large number of broad, progressive, and liberal and non-sectarian medical men who read these journals and keep watch for everything new or good that appears in their columns. I do not use nostrums or proprietaries, never have used any and always speak out against them whenever I have an opportunity, but I must have a fair field and a free parliament which no man could have in contributing for journals like THE JOURNAL A. M. A.

I am a specialist in the treatment of rheumatism and diseases of the stomach and liver and diseases of children, and have been grandly successful, more so than I ever dreamed possible when I started in the practice of medicine. I like to spread the light, and tell other doctors what I have done and what they can do by using the same means, but you would not think for a moment of admitting one of my articles to the columns of THE JOURNAL A. M. A., for I often carry a case of rheumatic fever to a very quick and successful termination with such remedies as bryonia, iris, rhus tox., pulsatilla, gelsemium, colchicin, veratrum, aconite, apocynum and guaiacum.

I demand that any journal that I write for shall be broad and liberal and non-sectarian enough to publish articles recommending any ethical remedy that I have proved to be of positive curative value. We need a much higher standard of medical ethics. They are absolutely disregarded by most medical men now. A poor sick doctor in South Carolina writes to me in asking advice for his desperate case of rheumatism, "I have paid out everything but my home to the M.D.'s for treatment and am not cured." What kind of ethics would allow a man to take the last dollar from a suffering brother physician?

W. M. GREGORY, Berea, Ohio.

The Niemeyer Pill

To the Editor:—The "Niemeyer Pill," concerning which there has recently been an interesting correspondence in THE JOURNAL [January 21, p. 211 and February 11, p. 443], is commonly known in England as Addison's pill. That it was used long before Niemeyer's time is proved by its inclusion in the first edition of the Pharmacopeia of Guy's Hospital, published in 1837, when Bright was one of the full physicians and Addison the only assistant at the hospital. The pill was then called pilula scillæ cum hydrargyro and its composition is as follows:

℞ Hydrargyri oxidi gr. xx.
Pilularum scillæ compositarum dr. iv.
Misce. et divide in pilulas lx.
Dosis, i, ii, vel iii, semel, bis, sæpiusve quotidie.

The following is the formula of the pilula scillæ composita:

E singulis drachmis scillæ formentur pilulæ xii.
Dosis, i, ii, vel iii, bis, ter, quaterve quotidie.
Singulis pilulis interdum adde.
Digitalis foliorum contritorum gr. ss.

ARTHUR F. HERTZ, London, Eng.

Anterior Poliomyelitis: The Proper Method of Diagnosis

To the Editor:—In a letter to the *New York Medical Journal*, published several years ago, I made the suggestion, from analogy, that the first tonsil (Luschka's) was probably the site of infection in poliomyelitis. Dr. Bryant's recent article has confirmed this probability.

In a recent number of THE JOURNAL, Dr. Flexner reports that he and his collaborators have suggested that the nasopharynx acts in human beings as the portal of entry of the virus into the central nervous system, as well as the source of its dissemination to other human beings. He also calls attention to the work of Osgood and Lucas showing that the virus can survive in the nasopharynx of the monkey for nearly six months. . . The importance of securing methods of early and certain diagnosis of anterior poliomyelitis, says Flexner, is self-evident. By taking advantage of the changes which regularly occur in the cerebrospinal fluid it is possible, early in the course of the infection, to arrive at a certain diagnosis.

As it would be comparatively easy both to diagnose and to treat this disease by going at once to the place which is now known to be the site of infection in this and in all air-borne infections, I would suggest the following method: In a patient suspected of harboring the germs, sterilized cotton carriers should be inserted through the nose to the nasopharynx. These infected carriers with their bits of cotton are returned to the tubes and later used to infect either monkeys or guinea-pigs. This procedure of passing the cotton into the nasopharynx suggests the proper method of sterilizing this space, namely by wetting the cotton in hydrogen peroxid.

EDMUND D. SPEAR, M.D., Boston.

The Secret Commission Evil

To the Editor:—I read in THE JOURNAL, March 11, Dr. Lord's article on "The Secret Commission Evil."

I have been making furrows in these muddy country roads for seven winters and have driven through the dust for seven summers. On my rounds I have seen and studied many cases. On one occasion I was sent to consult a big surgeon concerning a case which was causing a great deal of worry to the whole family. I saw the surgeon, and after our consultation, I was asked: "Where do you send your surgical cases?" I proudly answered, "I operate whenever I can get the consent of the patient, doctor." This surgeon did not take me along to dinner, although he had remarked previously that he was on his way, nor did he seem to enjoy my company thereafter.

On another occasion, an old classmate introduced me to some of his specialist friends. They also asked: "Where do you send your patients?" I answered: "My territory is pretty far away, doctor." Our visit was perceptibly less sociable afterward. What would the proposition have been if the answers had been more pleasing to the surgeon and the specialists?

I feel that I missed some good entertaining or perhaps "fee-splitting." Maybe these gentlemen needed finances more than patients. Where does "fee-splitting" start?

AUGUST BECHTOLD, M.D., New Athens, Ill.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF IMPACTED CERUMEN FROM EAR

To the Editor:—I have been interested in the query of Dr. Blackly, in THE JOURNAL, March 11, regarding removal of impacted cerumen from ear. Filling the ear at night with olive oil and following this by hot irrigation next morning with biborate of soda solution will remove the impaction very easily. The patient is advised to sleep with the affected ear uppermost. If the opposite ear is also in need of attention the same treatment may be used on the following night.

ERNEST BOSTON, M.D., Taylor, Texas.

ODOR FROM ASPARAGUS

To the Editor:—What is the peculiar odor noticed in urine after eating asparagus? Have any harmful effects been known as a result of eating this vegetable? I have a faint recollection of hearing a medical instructor caution against its use in kidney disease.

A. I. L.

ANSWER.—The odor in urine after eating asparagus is due to asparagin—a crystalline substance which exists in smaller quantities also in lettuce, potato, marshmallow and other vegetables and is said to have diuretic and sedative properties. The eating of asparagus is not generally thought to have harmful effects.

BACTERIOLOGY OF COLDS

To the Editor:—Please give me the facts known with regard to the bacteriology of "colds." Is the influenza bacillus usually responsible for ordinary colds or are other germs sometimes the cause? Also, does the infection spread along the mucous membrane from the first site or is the blood concerned in its propagation?

B. S. PENN, Humboldt, Tenn.

ANSWER.—The actually known facts regarding the relations of bacteria to "colds" are somewhat meager. It is believed by many authorities that the essential factor in a "cold" is congestion due to vasomotor changes, not necessarily connected with bacterial action, the association of bacteria with such changes being merely secondary. Other "colds" follow the direct action of irritants, prominent among which may be bacteria-laden dust. In other cases there is proliferation of bacteria already domiciled on the mucous membrane. The ordinarily latent microorganisms spring into renewed activity when the resisting power of the individual is diminished. A number of organisms have been found in the nasal secretions in "colds." Among these may be mentioned *Micrococcus catarrhalis*, streptococci, staphylococci, the pneumococcus, an unnamed diplococcus and the influenza bacillus. Some "colds" are evidently contagious, but their microbic cause has not been discovered. The influenza bacillus does not seem to be usually responsible for ordinary "colds." Even in epidemics, characterized by the symptoms of influenza, the influenza bacillus has not been demonstrated in all cases. So far as clinical observation goes, it would appear that the infection spreads by contiguity along the mucous membrane in most cases. An infection by way of the blood is possible, not probable.

CHINESE DO NOT PAY PHYSICIANS TO KEEP THEM WELL

To the Editor:—Ever since I was a boy I have met with occasional references in books and newspapers to the "Chinese custom of paying their physician when they are well and stopping payment when they are sick." Is there any truth in this statement? Has this been the custom in China, or is it merely a traveler's yarn or a utopian fancy? C. U. S.

ANSWER.—Contracting to keep a patient in health is at least extremely rare in China. All authorities acquainted with China agree that the method is so seldom met with as practically not to exist. Were there such a custom the physician (though that is hardly the term to apply to the native malpractitioner) would promptly go out of business, for his clientele would speedily develop real and imaginary cause for reducing his income to zero. The misstatement is often seen in the literature, but must be classified with the fabrication that the Chinese eat rats, or that they did not wear long hair till compelled to do so by the Manchu conquerors.

TREATMENT OF ACIDOSIS

To the Editor:—Please give the most satisfactory treatment, both dietetic and medicinal, for acidosis. I. W. C.

ANSWER.—Acidosis is due primarily to insufficient oxidation, and secondarily to an insufficient supply of carbohydrates, the organism being obliged in that case to break up proteins or fats to sustain life. The dietetic remedy, therefore, is a supply of carbohydrates sufficient to spare the fats which are regarded as the chief source of the acid. In diabetes this supply of carbohydrates should be sufficient to avoid the dangers of acidosis but not enough to increase to a dangerous extent the amount of sugar in the blood and urine. Medicinally it is theoretically correct to administer remedies which will increase oxidation. Alkalies are believed to have this power and are the chief remedies employed in the treatment of acidosis.

The Public Service

Medical Department, U. S. Army

Changes for the week ended March 18, 1911.

Lowe, Thomas S., M.R.C., ordered to proceed from Whipple Barracks, Ariz., to Fort Apache, Ariz., for temporary duty.

Jones, George B., M.R.C., left Fort Benjamin Harrison, Ind., with the 10th Infantry, en route to Fort Sam Houston, Texas.

Vose, William E., major, left Jackson Barracks, La., with 164th Co. Coast Artillery en route to Galveston, Texas.

Holmes, R. W., lieut., left Plattsburg Barracks, N. Y., with troops en route to Texas.

Whitcomb, C. C., and Crabtree, George H., majors, promoted to major, Medical Corps, to rank from Jan. 1, 1911.

Kelly, John P., M.R.C., ordered to Fort Hamilton, N. Y., for duty.

Marietta, Shelley U., M.R.C., resignation accepted by the President.

Walker, Thomas C.; Koyle, Fred T., and Eliot, Henry W., M.R.C., ordered to proceed to Newport News, Va., for assignment to duty on transports.

Daywalt, George W., M.R.C., is honorably discharged from the service of the United States, his services being no longer required.

Hoff, John Van R., colonel, ordered to proceed to Albany N. Y., to read a paper at the meeting of the Medical Society of the State of New York, on or about April 18 and 19, 1911, on the subject of "Experience of the Army with Vaccination as a Prophylactic Against Small-pox."

Hess, Louis T., major; Weed, Frank W., captain; Burket, John A., and Fisk, Owen C., lieuts., ordered to proceed to Galveston, Texas, and report for duty with the field hospital to be organized at that place.

Reynolds, F. P., major, in addition to his other duties will perform the duties of medical superintendent of the transport service at Newport News, Va.

O'Connor, C. H., major, ordered to proceed to San Antonio, Texas, and assume command of Ambulance Co. 38, to be assembled at that place.

Field, Peter C., major, granted leave of absence for two months, about June 1, 1911.

Johnson, Thomas H., lieut., left Fort Baker, Cal., en route to San Diego, Cal., for duty with 30th Infantry.

Gilchrist, H. L., major, reports for duty at Fort Sam Houston, Texas.

Etter, Harry B., lieut., left Fort Snelling, Minn., with 2d Squadron, 4th Cavalry, en route to El Paso, Texas.

Campbell, George F., M.R.C., left Fort Wingate, N. Mex., en route to Fort Sam Houston, Texas, with Co. A, 18th Infantry.

Hanson, Louis H., captain, left Fort Hamilton, N. Y., with troops en route to Texas.

Knox, Howard A., lieut., left Fort Hancock, N. J., with troops en route to Texas.

Gosman, George H. R., major, left Fort Barrancas, Fla., en route to Galveston, Texas, with 15th and 20th Cos. Coast Artillery.

Hutton, Paul C., major, left Fort Snelling, Minn., with the 28th Infantry, en route to Fort Sam Houston, Texas.

Bowen, A. S., lieut., and Maynard, E. B., M.R.C., left Fort Snelling, Minn., with the 28th Infantry, en route to Fort Sam Houston, Texas.

Patterson, Robert U., major, left Fort Banks, Mass., en route to San Antonio, Texas.

Long, Charles J., D.S., reports for temporary duty at Fort Constitution, N. H.

Phillips, Hiram A., lieut., left Fort Banks, Mass., en route to Fort Monroe, Va.; reported March 10 for duty on the *McClellan*.

Hopwood, L. L., captain, left Fort Monroe, Va., en route to Galveston, Texas.

Mount, James R., lieut., left Fort Sheridan, Ill., en route to St. Louis, Mo., for temporary duty at supply depot.

Rich, Edward W., captain, reported for duty with the 4th Reg. Prov. Coast Artillery, presidio of San Francisco, Cal., for duty in field.

Welles, E. M., Jr., lieut., left presidio of Monterey with troops for duty at San Diego, Cal.

Wales, Philip C., major, left presidio of Monterey with troops en route to San Diego, Cal.

Eckwurzel, George M., major, left Fort Mackenzie, Wyo., with headquarters and two battalions of 18th Infantry en route to Texas.

Van Poole, Gideon M., major, left Fort Sheridan, Ill., en route to Fort Brady, Mich., for temporary duty.

Ragan, Charles A., captain, relieved from treatment at the Walter Reed General Hospital, Takoma Park, D. C., and from further duty in the Philippines division and assigned to temporary duty at the Walter Reed General Hospital.

Cole, Blase, M.R.C., resignation accepted by the President.

Manly, C. J., major, now at San Antonio, Texas, will proceed without delay to Galveston, Texas, and report to the commanding general, 1st Separate Brigade, for assignment to duty.

Davis, William B., col., granted leave of absence for two months and nine days, to take effect on his arrival in San Francisco, Cal.

Purnell, Harry S., captain, ordered to the Army General Hospital, San Francisco, Cal., for duty.

Bartlett, William H., captain, ordered to proceed from San Antonio, Texas, to Fort Oglethorpe, Ga., for temporary duty.

Richardson, William H., captain, reported for duty to commanding officer, 4th Prov. Reg. Art., at presidio of San Francisco, Cal., for field duty.

Tuttle, George B., M.R.C., left San Francisco, Cal., for duty in the field.

Ashburn, James A., M.R.C., left Fort Assiniboin, Mont., accompanying troops to Fort D. A. Russell, Wyo.

Hartsock, F. M., major, reports arrival at San Antonio, Texas.

Baker, David, major, and Darby, Taylor E., lieut., report arrival at camp near Fort Sam Houston, Texas, with the 17th Infantry.

Frick, Euclid B., lieut.-colonel, and Tasker, Arthur N., lieut., left presidio of San Francisco en route with the 30th Infantry to San Diego, Cal., for field service.

Fletcher, John P., lieut., left Fort D. A. Russell, Wyo., with the 9th Cavalry to Fort Sam Houston, Texas.

Dutcher, Basil H., major, reports arrival at San Antonio, Texas, to assume command of the field hospital.

Fauntleroy, P. C., major; Beery, Harry R., lieut., and Jones, George B., M.R.C., report arrival at Camp San Antonio, Texas, with the 10th Infantry.

Mills, Fred H., M.R.C., left Fort Missoula, Mont., en route to Fort Assiniboin, Mont., detached duty.

Reynolds, F. P.; Fauntleroy, P. C.; Clayton, Jere B.; Bispham, William N.; Dean, Elmer A., majors; Bevans, James L., and Thomas, Henry D., captains. Orders directing the above officers to take a course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan., is revoked.

Stone, Frank P., D.S., left presidio of Monterey, en route to Fort Rosecrans, Cal., for temporary duty.

Long, Charles J., D.S., reported for temporary duty at Fort Williams, Maine.

Medical Corps, U. S. Navy

Changes during the week ended March 18, 1911.

Morris, L., surgeon, detached from the naval supply depot, navy yard, New York, and ordered to the *Hancock*.

Benton, F. L., surgeon, detached from the *Franklin* and ordered to the *Idaho*.

Plummer, R. W., surgeon, detached from the *Idaho* and ordered to the *Franklin*.

Cook, F. C., surgeon, detached from the *North Carolina* and ordered home to await orders.

Dykes, J. R., P. A. surgeon, detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the navy yard, Portsmouth, N. H., and to additional duty in connection with the *Southery, Topeka*, and naval hospital at that place.

Old, E. H. H., P. A. surgeon, detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the *North Carolina*.

Hoyt, R. E., P. A. surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Buffalo*.

McDowell, R. W., asst.-surgeon, detached from the Naval Academy and ordered to the Bureau of Medicine and Surgery, Navy department.

Michels, R. H., A. A. surgeon, appointed acting assistant surgeon from March 10, 1911.

Richardson, R. R., surgeon, detached from the *Prairie* and ordered to the *Virginia*.

Ohnesorg, K., surgeon, detached from the *Virginia* and ordered to the *Prairie*.

Crandall, R. P., surgeon, detached from the *Hancock* and ordered to treatment at the Naval Hospital, New York.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended March 15, 1911.

Anderson, J. F., P. A. surgeon, directed to proceed to Trenton, N. J., on special temporary duty.

Collins, G. L., P. A. surgeon, directed to proceed to Boston, and report to the medical officer in command for duty and assignment to quarters.

Salmon, T. W., P. A. surgeon, granted six months' leave of absence from April 18, 1911, without pay.

Frost W. H., P. A. surgeon, directed to proceed to Savannah, Ga., on special temporary duty.

Simpson, Friench, P. A. surgeon, granted fifteen days' leave of absence from March 20, 1911.

DeForest, C. M., A. A. surgeon, granted two weeks' leave of absence from April 25, 1911, without pay.

Duke, B. F., A. A. surgeon, granted fifteen days' leave of absence from Feb. 14, 1911, on account of sickness.

Horning, Henry, A. A. surgeon, granted seven days' leave of absence from March 8, 1911, under paragraph 191, Service Regulations.

Kuhn, C. F., A. A. surgeon, granted thirty days' leave of absence from April 15, 1911, with pay, and two months without pay, from May 15, 1911.

Weeks, A., A. A. surgeon, granted thirty days' leave of absence from March 6, 1911.

Wright, F. W., A. A. surgeon, granted eight days' leave of absence from March 18, 1911.

Board of medical officers convened to meet at the Marine Hospital, Portland, Maine, on call of the chairman, to conduct a medical survey of an officer of the Revenue Cutter Service. Detail for the board: Surgeon C. E. Banks, chairman; Surgeon J. M. Eager, recorder.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
Am. Assn. of Pathologists and Bacteriologists, Chicago, April 14-15.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
California, Medical Society of State of, Santa Barbara, April 18.
District of Columbia, Medical Association of, Washington, April 25.
Georgia, Medical Association of, Rome, April 19-21.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Mississippi State Medical Association, Jackson, April 11.
New York, Medical Society of the State of, Albany, April 18.
South Carolina Medical Association, Charleston, April 19-21.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Annual Meeting, held in Chicago, Feb. 27-28, 1911

(*Continued from page 844*)

The address of the president, Dr. John A. Witherspoon, will appear in full in THE JOURNAL.

Entrance Requirements for Admission to the Medical Course

DR. GEORGE EDWIN MACLEAN, President of the University of Iowa: The entrance requirements should be met absolutely without conditions. The work of the medical college is so heavy that the student should not be permitted to drag any entrance conditions after him. The success of the instruction in the first year is imperiled if the student must divide his attention between his current studies and back work. The abolition of conditions removes opportunities for college authorities, overzealous about attendance, or tempted to dishonesty in administration, to evade the published requirements. If the ideal requirement is adhered to, not less than two years of college work, there is little or no sense for one to seek admission to the medical school with a condition.

I would have the preliminary education consist of graduation from an accredited high school, normal school or academy, plus two years taken in an accredited college of liberal arts, with a course of at least one year each devoted to physics, chemistry and biology. The entrance requirements to the collegiate work should be made more flexible, the number of specifically required subjects in the secondary education being reduced in view of the fact that the two years in liberal arts round out the four years of the secondary school. In the period of six years there should be not less than two years of Latin or Greek, or four years of modern languages with the elements of Latin grammar, two years of mathematics, two years of English, one year of history and one year each of physics, chemistry and biology, preferably done in college. If, temporarily, some schools must be allowed the liberty of admitting on a four-year high school basis, and therefore think it necessary to specify rather particularly certain entrance requirements, might it not be possible to permit such colleges as require the two years of collegiate study for admission not to require specific subjects beyond Latin, physics, chemistry and biology? Practically every high school student will offer a reasonable amount in English, history and mathematics. The wider range of time given in which to complete the required subjects would largely do away with the evil of estimating equivalents and the frauds sometimes perpetrated in these estimates. This would also gain time for the extension of the professional courses, including hospital work.

The unit of measurement should be the "unit." Such terms as "count," "point" and "credit" should be discontinued. With reference to examinations, I would suggest that they total not less than fifteen units in required and elective subjects. I would select major topics in the four fields of language and literature, history, mathematics and science, instead of giving detailed examinations in all the subjects enumerated. The examiner should be an expert university or college examiner, meeting the few individuals who have prepared by tutoring or in unaccredited schools or through misfortune and age, come up without institutional training. He should size up these personalities in connection with all the records presented and use his discretion in giving a chance for these individuals in the college of medicine. We must preserve opportunities for individuals in this day of emphasis or institutionalism. The examiner can be depended on to conserve standards.

The entrance requirements, then, should be fifteen units of secondary school work in an accredited school, plus thirty hours of college work, the secondary and collegiate work embracing the required subjects of not less than two units of Latin or Greek, or four units of modern languages, provided an examination is passed in the elements of Latin grammar, two units of mathematics, one unit of history, two units of English, one unit or year hour each of physics, chemistry and biology. The candidate for admission should not be permitted to enter the college of medicine with conditions. The administration of these standards is to be by boards empowered by statute to administer them, and by accredited schools and colleges, and by authorized examiners not members of the medical colleges concerned.

DISCUSSION

DR. EGBERT LEFEVRE, University of Bellevue Hospital Medical College: One of the biggest stumbling blocks in the way of the medical colleges is the attitude of the universities not connected with the state toward this two-year college requirement. In the West the high school and university courses are correlated. In the East there is no such correlation. We have dissociated universities and colleges so that there is a great impediment to students passing from one to the other, and that makes it doubly hard for a high school pupil to get

two years of college work and then pass smoothly into college work. We demand an intensive course preparatory to a professional education which cannot be given in the professional or technical school, but in making this demand we place our students at a disadvantage because of this attitude on the part of the universities who do not wish to modify their curriculum to suit these two-year men. Until they accept it as a part of their duty to correlate their entrance requirements with the generally accepted and accredited high schools, there is going to be great difficulty in advancing men from the high school into the college to meet the requirements Dr. MacLean has mentioned.

DR. RANDOLPH WINSLOW, University of Maryland: I wish to endorse the suggestion that any man who has been unfortunate enough not to be able to secure the necessary collegiate training should have the right to get a medical education if he is capable.

DR. H. D. ARNOLD, Boston: I think we may admit that the strict regulations which we have tried to place about our examinations are due to the fact that we are not living up to our present standards. What we need more than anything else is a minimum that will be lived up to.

DR. J. S. FERGUSON, Cornell University: It seems to me anomalous that the same effort that tends to elevate the degree of M.D. should lower the degree of A.B. If we would endeavor to exercise our influence with the colleges not to do that, we would be able to secure preparatory medical courses in the non-state-supported institutions.

DR. ARTHUR DEAN BEVAN, Rush Medical College: Modern medicine demands a certain preliminary training. It demands that a man have a well-rounded secondary school education and a training in chemistry, physics and biology. The colleges which do not require that are doing poor, inefficient work in the light of the demands of modern medicine. Medical education also demands one year of practical training in a hospital where the student is part of the hospital machinery for the care of patients.

Administration of Entrance Requirements

DR. B. D. HARISON, Michigan State Board of Registration in Medicine: The proper method of administering requirements is by the board itself, covering credentials and credits, and in the event of an applicant not having the required qualification, he should be referred to a board of preliminary examiners, consisting of not less than four high school principals or superintendents for regular examination on the standard set by the board, covering a high school credential and its symmetrical features. This board reports its findings to the medical board. A properly constituted board of this kind will, in my experience, refuse the proper certificate to at least 75 per cent. of the applicants. This is not only an honest administration, but a practical one.

(To be continued)

AMERICAN CONFEDERATION OF RECIPROCATING EXAMINING AND LICENSING MEDICAL BOARDS

Ninth Annual Meeting, held in Chicago, March 3, 1911

The President, DR. WILLIAM A. SPURGEON, Muncie, Ind., in the Chair

Officers Elected

Dr. Spurgeon was reelected president and Dr. B. D. Harison, secretary; Dr. A. W. Alvord, Battle Creek, Mich., was elected vice-president.

Report of Secretary

Dr. Harison reported that the following states (fourteen) are now in membership in the confederation: Georgia, Indiana, Iowa, Kansas, Maryland, Michigan, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, Utah, West Virginia and Wisconsin.

The following states (nineteen) reciprocate on the basis of the qualifications adopted by the confederation, but are not in membership: Arkansas, Colorado, Delaware, District of Columbia, Illinois, Kentucky, Louisiana, Maine, Minnesota, Missouri, New Hampshire, New Jersey, New York, South Carolina, Tennessee, Texas, Vermont, Virginia and Wyoming.

From Jan. 1, 1910, to Jan. 1, 1911, 1,000 reciprocal registrations were made by twenty-five states, 894 on the basis of Qualification No. 1 and 106 on the basis of Qualification No. 2.

Report of Committee on College Inspection

Dr. Spurgeon, chairman, reported that the following constituted the committee on college inspection: W. A. Spurgeon, Indiana, chairman; A. W. Alvord, Michigan; H. A. Barbee, West Virginia; H. H. Baxter, Ohio; I. H. Goss, Georgia; E. A. Carr, Nebraska; J. V. Stevens, Wisconsin. It was recommended that any inspection made be in the company of some representative of the state board of the state wherein the inspection was made, since each state board was the court of last resort regarding these matters in its own state. It was resolved also that the examiner should cooperate with the Council on Medical Education of the American Medical Association and with the Association of American Medical Colleges. The standard of rating was to be the standard adopted by the confederation in 1908.

Dr. J. V. Stevens, secretary, reported that it was decided to ask the colleges to pay the expense of the inspection. The work cannot be completed before the next meeting of the confederation, and no information can be given out now.

Report of Committee on Amalgamation with the National Confederation

Dr. Harison, chairman, reported that a conference was held with a committee from the national confederation in June, 1910, but that no definite action was taken at that time. It was considered desirable that the two confederations unite, but the basis for such a merger could not be made mutually agreeable then. The following communication bearing on this subject was then presented:

CHICAGO, March 2, 1911.

At the call of Dr. W. P. Harlow, dean of the School of Medicine of the University of Colorado, and president of the Association of American Medical Colleges, the following persons met in an informal conference for the purpose of discussing how a union of the two confederations of state examining and licensing boards might be effected:

Dr. Arthur Dean Bevan and Dr. N. P. Colwell, chairman and secretary, respectively, of the Council on Medical Education of the American Medical Association; Dr. Charles A. Tuttle and Dr. George H. Matson, president and secretary, respectively, of the National Confederation of State Medical Examining and Licensing Boards; Dr. William A. Spurgeon and Dr. B. D. Harison, president and secretary, respectively, of the American Confederation of Reciprocating Examining and Licensing Medical Boards; Mr. Abraham Flexner of the Carnegie Foundation for the Advancement of Teaching; Dr. William P. Harlow and Dr. Fred C. Zapffe, president and secretary, respectively, of the Association of American Medical Colleges.

On motion of Dr. Bevan, Dr. Harlow was made chairman and Dr. Zapffe secretary of the conference.

On motion of Dr. Bevan, seconded by Dr. Harison, it was voted that it be the sense of the conference that it is desirable that there be in this country one strong organization of state examining and licensing boards.

On motion of Dr. Matson, seconded by Dr. Colwell, it was voted that the name of such an organization might well be the National Federation of State Medical Boards.

On motion of Dr. Harison, seconded by Dr. Matson, it was voted that the membership of such an organization should consist of members, fellows and associates; that state boards only to be entitled to membership, with power to vote; ex-state board members to be elected to fellowship, without vote, and physicians, not members of an examining or licensing board, who are interested in medical education and state licensure, to be elected to associate membership (without vote) by a two-thirds vote of the members present at any meeting. Only fellows are to be exempt from the payment of dues.

WILLIAM P. HARLOW, Chairman.
FRED C. ZAPFFE, Secretary.

By a resolution presented by Dr. A. W. Alvord, it was voted that the president and secretary of the confederation with three others selected by the president constitute a committee to meet with a similar committee representing the national confederation for the purpose of effecting an amalgamation of the two organizations. The committee appointed consists of Drs. A. W. Alvord, Michigan; E. A. Carr, Nebraska; H. H. Baxter, Ohio; William A. Spurgeon, Indiana, and B. D. Harison, Michigan.

XUM

By another resolution presented by Dr. Spurgeon, it was voted that specific education provisions in a medical practice act tend to weaken the law and to limit the educational standards in the state; that the confederation recommends the conferring of discretionary powers on the board of registration in the matter of educational control, and that the law should provide that the board make, establish and require such rules and regulations for the control of medical colleges as shall keep the educational standard of the state at least on a par with the average standard of surrounding states.

Entrance Requirements

DR. B. D. MYERS, University of Indiana, discussed the present requirements for admission to medical colleges demanded by fifteen medical colleges beyond the high school graduation, and presented some data compiled by the secretary of the Council on Medical Education of the American Medical Association, showing the lack of uniformity in these requirements. Six schools demand sixty hours of work, or two years of college work, in addition to the four years of high school work; eight demand from sixty-one to sixty-nine hours, and one school demands as high as eighty-two hours. Among the required subjects are physics (twelve colleges); botany and zoology or either (thirteen colleges); vertebrate anatomy (four); embryology (two); osteology (one); English (eleven); modern language (twelve); chemistry (fourteen); psychology (seven); Latin (one); economics, sociology, history and political science (eight); mathematics (five); hygiene (one); military drill (one); electives offered (seven). Four colleges offer electives to the extent of twenty-one, twenty-four, thirty-two and thirty-three hours, respectively, out of a total of sixty hours.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Fourth Weekly Meeting

PUERPERAL INJURIES

INJURIES OF THE PELVIC FLOOR: Varieties: 1. Superficial median tears. 2. Deep median tears, involving sphincter. 3. Lateral tears involving sulci. Pathology and diagnosis of each.

TREATMENT OF PERINEAL LACERATIONS: Indications and contra-indications for primary and for secondary operations.

Technic of repair (a) of deep (complete) laceration, (b) of laceration involving sulci.

After-treatment of operations for repair of perineal lacerations.

INJURIES OF CERVIX UTERI

VARIETIES: Bilateral, unilateral, stellate.

SYMPTOMS: Backache, bearing-down feeling, headache, leukorrhea, menstrual disorders, sterility, abortion.

Indications and contra-indications for repair of laceration of cervix.

Preliminary and preparatory treatment.

Technic of trachelorrhaphy, of amputation of cervix.

Monthly Meeting

The Differential Diagnosis of Ovarian Cysts.

The Non-Surgical Treatment of Retrodisplacements of the Uterus.

The Symptoms and Diagnosis of Fibromyomata of the Uterus.

The Prophylaxis and Treatment of Puerperal Injuries of Cervix and Perineum.

Book Notices

AN INTRODUCTION TO VERTEBRATE EMBRYOLOGY. Based on the Study of the Frog, Chick and Mammal. By Albert Moore Reese, Ph.D. (Johns Hopkins), Professor of Zoology in West Virginia University. Second Edition. Cloth. Price, $1.50 net. Pp. 340, with 118 illustrations. New York: G. P. Putnam's Sons, 1909.

Since the development of man and other mammals is, in most particulars, strikingly like that of the chick, a study of the latter is helpful. In this book the author presents an outline of the main facts of the embryology of the chick—also of the frog—keeping in mind particularly the needs of the medical student. The description considers periods of development: all the changes that take place during a certain period are described in one section, instead of describing at one time the complete development of any one organ. This method is not only pedagogically correct but enables the student to grasp facts better and more quickly. Theoretical discussions are carefully avoided. The author has added a chapter of forty pages on "The Development of the Mammal," in which are pointed out the main differences between the embryologic processes of the chick and those of man

WE YOUNG MEN. The Sexual Problem of an Educated Young Man Before Marriage: Purity, Strength and Love. By Hans Wegener. Introduction by Sylvanus Stall. Paper. Price, 70 cents. Pp. 204. Philadelphia: Vir Publishing Co., 1911.

It was a most commendable piece of work to translate this German book, thereby making it available for young men who read English. As the advertisements state, it is a square talk face to face. It is a delicate but vigorous presentation of clean living. Some will object to the frank way in which the author takes for granted that some young men seriously consider the breaking of various moral laws concerning sexual indulgence. For this very reason, however, the book will have greater weight with this class of men than the numerous books already on the market which preach to young men. We do not mean to suggest that this book is not on a high plane, for it is full of noble and lofty appeal to the best that is in a man; but it meets young men on their own level, and it has the valuable quality of convincing the reader that the author has been in pretty close touch with these problems. The book is a good one to succeed "The Boy's Venereal Peril," being intended for youths who are a little more mature.

RADIUM: ITS PHYSICS AND THERAPEUTICS. By Dawson Turner, B.A., M.D., F.R.C.P., Edin., Lecturer on Medical Physics, Surgeons' Hall, Edinburgh. Cloth. Price, $1.75 net. Pp. 86, with 27 illustrations. New York: William Wood & Co., 1911.

This is a little octavo book of only 86 pages, hardly larger than some of the elaborate papers on radium therapy, but it satisfactorily covers the subject. The essential facts in the physics and the principles of the therapeutic application of radium are clearly and simply given, without any of the complexity usually found in articles on the subject, which indicates more than anything else a hazy knowledge on the part of the writer. It may be specially noted that Turner considers carefully the histologic changes produced by radium in both healthy and diseased tissues—a topic which would seem to be of obvious importance in any consideration of radium therapy, but one, so far as we know, which no other book on the subject has given in detail. The book is a fine example of how simply and briefly a rather muddled subject can be stated by one who understands it and who has the ability to think clearly and distinguish essentials from trivialities.

PRACTICAL PHYSIOLOGY. Edited by M. S. Pembrey. By Various Contributors. Third Edition. Coth. Price, $4 net. Pp. 480, with 255 illustrations. New York: Longmans, Green & Co., 1910.

In this book not only are the facts of the physiology of the human organism taught according to the latest deductions and conclusions, but each is demonstrated by an abundance of experiments, both elementary and more advanced, and the practical application made with reference both to normal and pathologic function in the practice of medicine. Physiologic chemistry, in both its elementary and its more advanced aspects, is clearly treated, Part IV being devoted to the latter. The impression conveyed in an examination is that this book constitutes, not a mere enumeration of the facts of physiology, but a helpful, practical work on physiology, from the standpoint of the student or the practitioner.

Medicolegal

Expert Evidence Without Statement of Facts and Right to Show Latter

The Court of Appeals of New York holds, in the homicide case of People vs. Faber (92 N. E. R. 674), that there was no error in allowing physicians to express their opinions in regard to the sanity of the defendant without previously stating in detail the observations on which the opinions were based.

The court says that in the early history of the courts of England mere opinion evidence was wholly rejected. The admission of opinions as evidence by persons specially qualified by skill and experience to speak as experts has been a matter of development both in England and in this country. The history of the admission of such evidence with illustrations from decisions of the courts is given by Wigmore in his exhaustive work on Evidence, and in connection therewith he refers to the practice of admitting opinion evidence by experts based on observation, and concludes that evidence by experts of conceded skill and experience may be received when based on the observation of the witness without in the first instance necessarily requiring that the facts observed be stated to the court and jury. There is a great difference in the decisions of the courts of the states on this subject, but this court is in accord with the conclusions reached by Mr. Wigmore.

In common practice in the courts a physician who has examined a patient is allowed to testify directly as to the disease from which the patient is suffering. There seems to be no good reason for requiring a physician to specify in detail his observations before expressing an opinion as to the sanity or insanity of a person examined by him any more than he should be required to recount such observations in advance of expressing an opinion as to whether a person had typhoid fever or was suffering from an epileptic fit. It is competent, however, for a person offering an expert as a witness, for the purpose of showing the strength of the opinion which he is about to express, to specify in detail the observations on which the opinion is based. It is also, of course, competent for the opposite party on cross-examination to call for the observations, and probe the underlying facts to the fullest extent for the purpose of thus affecting, so far as possible, the strength of the opinion expressed or to form a basis on which other experts may be asked to contradict or explain the opinion first expressed.

Weight to be Given Expert Testimony

The Supreme Court of Georgia holds, in Rouse vs. State (69 S. E. R. 180) that, there being no statute prescribing the weight which shall be given to the testimony of an expert, what consideration such evidence is entitled to is a question solely for the jury. Under this principle, it was error to charge the jury that, "When the experience, honesty, and impartiality of the expert is undoubted by the jury, his testimony is entitled to great weight. It is not, however, so authoritative that the jury is bound to be governed by it. It is advisory merely, and such testimony is intended to assist you in coming to a correct conclusion." Moreover, such charge was error despite the fact that witnesses both for the state and for the accused testified on the trial of the case.

Crime Not Affected by Lack of Skill in Treatment of Wounds

The Supreme Court of Georgia holds, on the appeal of Perdue vs. State (69 S. E. R. 184), a homicide case, that, where one inflicts on another a wound with a weapon likely to produce death, and the person wounded actually dies in consequence of the wound, the quality of the act of the slayer cannot be affected by a lack of skill and care on the part of those who treat or attempt to treat the wounds and administer remedies therefor.

Current Medical Literature

[In the abstract of the case report of "Heroin Poisoning," made from the *Kentucky Medical Journal*, February 15, in THE JOURNAL, March 11, 1911, p. 777, the dose should have been 1/12 of a grain of heroin, instead of ½.]

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

March 9

1 *Dependence of Intestinal Indigestion on Gastric Disturbances. A. E. Austin, New York.
2 *The Possible Effect of Salvarsan on the Auditory Labyrinth. G. Alexander, Vienna.
3 Treatment of Fistula in Ano. T. C. Hill, Boston.

1. Dependence of Intestinal Indigestion on Gastric Disturbances.—Austin concludes that diarrhea does not always accompany an achylia nor a hypochlorhydria, nor can one, from the presence of connective tissue in the stool, always deduce the state of the gastric juice. Furthermore, while hyperchlorhydria is usually accompanied by constipation, there may be diarrhea, or the bowels may be regular, while with gastric myasthenia constipation is the rule, as it is in hypersecretion. A functional chronic catarrh of the small intestine may exist associated with any of these gastric conditions, with excessive or no free hydrochloric acid, and with increased or impaired motility, so that one can only say that improperly prepared food is poured into the small intestine which, either on account of this extra burden or on account of some antecedent inflammatory disturbance, undergoes a functional impairment that usually manifests itself by the increased motility.

2. Effect of Salvarsan on the Auditory Labyrinth.—Personal observations lead Alexander to recommend caution in the use of salvarsan in cases of acute syphilis of the auditory nerve. Especially is caution in the use of the remedy recommended in the presence of acute or chronic disease of the auditory nerve in cases of recent syphilis, as here it is to be feared that the ear symptoms will be made worse. It appears to make no difference whether the disease of the auditory nerve is of itself of syphilitic origin or not. An unfavorable influence is also to be feared in cases of acute syphilitic affection of the auditory nerve in old cases of syphilis or latent chronic syphilis. In cases of hereditary syphilis, in the presence of acute manifestations of trouble with the auditory nerve, it is advisable to wait before giving the injection. On the other hand, there are a large number of cases of ear disease in which the dangers from the injection cannot be considered as dependent on it. Here belong the cases of chronic syphilitic affection of the auditory nerve with slight diminution of hearing power and considerable tinnitus, as well as the cases of chronic labyrinth dizziness. Alexander found that the injection has a good effect in cases of chronic labyrinth disease in chronic syphilis.

Medical Record, New York

March 11

4 *Pellagra as We See It in Italy; Old and New Theories; Report of Cases Seen in New York City. A. Caccini, New York.
5 *A New Variant for Ventral Hernioplasty. A. G. Gerster, New York.
6 *Hypodermic Injections of the Salicylates in Rheumatism. A. Seibert, New York.
7 Treatment of Acute Mania. C. P. Noble, Philadelphia.
8 Unilateral Chyluria Caused by the Filaria Sanguinis Hominis Treated by Salvarsan. P. M. Pilcher and J. T. Pilcher, Brooklyn, N. Y.
9 *Artificial Muscles in the Early Treatment of Infantile Paralysis; a New Method. R. O. Meisenbach, Buffalo, N. Y.
10 Climatic Indications of Egypt in Otology and Laryngology. Dr. Goldman, Cairo, Egypt.

4. Pellagra.—While holding that we should follow with attention the new theories and the result of the researches on the etiology of pellagra conducted through new lines far apart from the theory well established by Lombroso, based on the use of Indian corn, and to its late modifications, Caccini urges caution in casting aside the result of careful inves-

tigations (based on well-established data) to embrace in our enthusiasm mere suggestions of young observers. Sambon's and Alessandrini's theories, that would tend to make of pellagra a disease of protozoal or parasitic nature, respectively, he would consider as mere suggestions, rather than theories or even intuitions of a new theory. As to the development in the United States, pellagra has been present in the United States in sporadic cases for a long time, but it has lately been diffused everywhere in the different states, assuming an epidemic character. The disease assumes a more acute course in contrast to its characteristics in Europe, and particularly in Italy, where, although very common, it has always the character of chronicity and the erythema never assumes the severe character which it does in the United States.

5. **New Variant for Hernioplasty.**—The procedure employed by Gerster in a case of large ventral hernia, without adhesions, is described as follows: An oval portion of the central area was excised as far as it was found to be thin and anemic, then the hernial aperture in the parietes was dissected out until the aponeuroses of the rectus and the oblique came into view under the laterally detached skin-flaps. After this, seven sutures of quadruple stout chromic catgut were used to approximate and keep in contact the edge of the rectus and the musculo-aponeurotic line of the oblique muscles, the sutures passing through the sheath of the rectus. Above this, a second row of single catgut sutures was superimposed, widening the surfaces of contact. Thus there were formed two redundant, cockscomb-shaped flaps of aponeurosis and stout cicatricial material, that met with their peritoneal faces above the stout sutures. Of these the external one was twice scored, thus scalloped into three digits, the inner one receiving three corresponding stabs, which would form three slits comfortably admitting the three fingerlike processes. Each process having been passed through its corresponding fenestrum was sutured at its extreme end to the underlying fascia of the rectus; the inner square edge of the fenestrated flap being likwise sutured to the aponeurosis of the underlying external oblique muscle by six or seven stitches. Over all this the skin was brought together and sewed with interrupted fine silk sutures.

6. **Salicylates in Rheumatism.**—That a salicylate solution could be injected hypodermically without discomfort to the patient, and that a sufficiently large injection of salicylic acid or sodium salicylate would destroy the vitality and inhibit the pathogenic action of rheumatic organisms in the human body in a few hours without causing symptoms of salicylic poisoning, is the belief Seibert holds as the result of observation. In acute rheumatic infection of joints, heart, pericardium, pleura and central nervous system (chorea), he injected 10 c.c. of a 20 per cent. sterilized solution of fresh sodium salicylate to 100 pounds of body weight, fifteen minutes after an appropriate cocain solution had been injected under the same spot. If the injections are made earlier than this, he found that the solution caused pain. This dose is repeated every twelve hours. In severe cases, with many localizations of the rheumatic process, he says that the dose may be increased to 15 c.c. of the solution to 100 pounds of body weight. He considers it essential to the success of this treatment that the above doses be used. Smaller doses will be without effect. The effect may be noticed within three hours after the first injection. Joint stiffness, pain, fever and pulse-rate diminish and the general feeling of the patient improves. If the injections are continued regularly, every twelve hours, the improvement also continues; if they are omitted for twenty-four hours in severe cases, the symptoms will grow worse; but in milder cases the improvement may continue, proving that a sufficient amount of the salicylate had already been injected to destroy all rheumatic organisms in that case.

In chronic cases 10 c.c. to 100 pounds of body weight of the following oily solution are injected every twenty-four hours: Acid salicylici, 10 grams (2½ drams); olei sesami, 80 grams (20 drams); alcohol, pure, and gum camphor, 5 grams (1¼ drams) each. This mixture is sterilized before the alcohol is added, but must not be exposed to the air, as the alcohol will evaporate and the salicylic-acid crystals will precipitate. The effect of the injection in chronic cases is noticed sooner when multiple localizations of the rheumatic process are present than when but one joint is affected. In the former, pain and stiffness usually improve after the first, in the latter, after the third injection. The addition of camphor (from 5 to 20 per cent.) has been found beneficial in stimulating the heart, especially in pericarditic and endocarditic cases. The weaker the heart, the more camphor may be given in the oil. The entire absence of all the toxic symptoms which are sometimes seen when salicylates are given by mouth, is said to be one of the pleasantest features of this method of treatment. The technic of injection is described fully.

9. **Artificial Muscles in Infantile Paralysis.**—Artificial rubber muscles are made to take the place of paralyzed or weak muscles by Meisenbach. For the construction of artificial muscles an ordinary rubber dam is used. The method is chiefly applicable to the ankle, the knee, the wrist and shoulder joints. By the use of artificial muscles the lost power may be supplied temporarily until the paralyzed muscles have recovered, and contractures of opposing groups may be prevented. The rubber over the affected muscles causes a local stimulation which is noted by active hyperemia and perspiration of the skin beneath the artificial muscle. Its use does not immobilize the joint, nor does it interfere with other prescribed treatment, namely, passive motion, massage, or electrical contractions. Its efficiency is continuous and its simplicity does not interfere with the clothing or the bathing. It is not intended to be used in advanced cases after the contractions have taken place.

Cleveland Medical Journal

February

11 Typhoid in Cleveland in Relation to Pollutions of Lake Erie. R. G. Perkins, Cleveland.
12 The Legal Duty of Physicians to Report Venereal Diseases. R. B. Newcomb, Cleveland.
13 The Reporting of Venereal Diseases. F. Oakley, Cleveland.
14 *Submucous Resection of the Nasal Septum, with a Description of the Author's Special Instruments. M. Metzenbaum, Cleveland.
15 Infantile Paralysis. H. O. Feiss, Cleveland.
16 Support of the Pelvic Viscera. E. O. Houck, Cleveland.
17 Management of Prostatic Hypertrophy. D. S. Gardner, Massillon, Ohio.

14. Also published in the *Laryngoscope*, February, 1911.

Bulletin of the Johns Hopkins Hospital, Baltimore

March

18 *Cirrhosis of the Liver. Five Different Types of Lesions from Which It May Arise. F. B. Mallory, Boston.
19 *Typhoid Spine; Report of Two Additional Cases with Bony Changes in the Vertebræ. T. McCrae, Baltimore.
20 *Erythema Multiforme Iris During the Course of Typhoid. H. P. Parker and H. H. Hazen, Washington, D. C.
21 *Acute Tuberculous Endaortitis. P. G. Woolley, Cincinnati.
22 *A Case of Extensive Thiersch Skin Graft. W. D. Gatch, Baltimore.
23 Two Cases of Congenital Hemolytic Jaundice with Splenomegaly. W. S. Thayer and R. S. Morris, Baltimore.

18. **Cirrhosis of the Liver.**—According to Mallory, at least five different types of lesions may terminate in cirrhosis (sclerosis) of the liver; one is acute, the other four more or less chronic in character. Toxic cirrhosis (following extensive central necrosis) demonstrates clearly the following three facts: 1. When all the liver cells of a lobule are destroyed the bile ducts grow out a certain distance toward the hepatic vein, but do not produce liver cells. 2. Liver cells regenerate only from liver cells, never from bile duct epithelium. 3. Fibroblasts (connective tissue cells) do not proliferate when liver cells alone are destroyed. The other four types of lesions terminating in cirrhosis show that fibroblasts multiply (regenerate) only when fibroblasts themselves have been injured or destroyed and thus lead to increase of the connective tissue. The so-called alcoholic type of cirrhosis is characterized by a peculiar hyaline degeneration of the cytoplasm of the liver cells preceding necrosis. In this same type of cirrhosis the contraction of the connective tissue frequently compresses groups of liver cells so that they may resemble bile ducts; in these compressed liver cells it is often possible to demonstrate large fat vacuoles or hyaline material due to degeneration in the cytoplasm, neither of which occurs in true bile duct epithelium. In toxic cirrhosis the connective tissue

thickens from contraction, but does not increase in amount because the fibroblasts have not been injured. In infectious cirrhosis the fibroblasts are destroyed along with the liver cells; hence there is active regeneration and much production of connective tissue. In syphilitic infection of the liver the primary injury is done to fibroblasts; in consequence they proliferate (regenerate), often in excess; the contraction later of the collagen fibrils produced by them results in compression and more or less atrophy of the included liver cells. In pigment and alcoholic cirrhosis the proliferation of the fibroblasts is apparently due to injury caused mechanically by cells of exudate origin stretching the connective tissue; the reaction is similar to that produced in the lungs and peribronchial lymph nodes by endothelial leukocytes filled with carbon packing themselves in the finer lymph spaces.

19. **Typhoid Spine.**—These two cases are reported fully by McCrae. In the first case symptoms of typhoid spine were present in March, 1909, four months after the recovery from typhoid, and again in April. One point of interest is the occurrence of a relapse or second attack between five and six months after the original attack. Whether this should be termed a relapse or a second attack, McCrae found it difficult to decide, for there is no period which can be set as a dividing line between a relapse and a second attack. The case here reported is much like one previously described by McCrae, in which the original attack began on June 2, the patient being convalescent in March when the symptoms of typhoid spine appeared. He was admitted to the hospital on July 4 of the same year for the spinal symptoms, and a week later the second attack (or relapse) of typhoid began. In both of these cases there was an interval of months between the attacks, in which the symptoms of spondylitis appeared. One explanation of the cause of typhoid spondylitis is that there are local lesions in the bone in which typhoid bacilli are present. McCrae was tempted to suggest that this focus may have been the source of the second infection in these cases. However, our knowledge of what determines relapses is not very satisfactory and it would be easier to regard the second febrile attack in these two cases as a second attack rather than as a relapse. Besides, the retention of typhoid bacilli in the body after recovery from an attack of typhoid is so common (e. g. in the gall-bladder) that we should not attach too much importance to such a source of reinfection.

The second case is unusual in several particulars. In the first place it shows that typhoid spondylitis may occur without any severe pain. The symptom of pain has been regarded as the most essential one in "typhoid spine" and it is very evident in this case that but for the radiogram the diagnosis of spondylitis could not have been made. In this event the condition in the popliteal nerve would have been regarded as a posttyphoid neuritis and the causal influence of the local process in the spine would not have been recognized. The involvement of the nerve root on the opposite side to that on which the deposit of bone occurred is seen not infrequently in cases of spondylitis. McCrae thinks it may be regarded as an established fact that "typhoid spine" is a spondylitis or a perispondylitis with definite local changes which may lead to the formation of new bone and so result in more or less fixation of the spine. Judging from spondylitis generally, this permanent change is less likely to occur if the proper treatment is instituted early. Many cases of spondylitis clear without permanent changes.

20. **Erythema Multiforme Iris.**—The authors regard it as certain that the patient had typhoid on two occasions, the second attack occurring within a week after recovery from the first. During the height of the first attack he had the following symptoms characteristic of the erythemas: annular and macular skin lesions, and swelling and redness of the carpophalangeal joints. During the height of his relapse he suffered from edema of the upper lip (giant urticaria), erythema at points of pressure and hemoptysis. The fact that these lesions occurred only when the infection was young and active, the authors think would seem to indicate that the typhoid toxemia was responsible for them.

21. **Acute Tuberculous Endaortitis.**—The case reported by Woolley is the eleventh of acute tuberculous endaortitis. The aortic tubercles were the result not of extension, but of mestastasis from chronic lesions in the kidney. The general miliary tuberculosis that co-existed with the chronic tuberculosis, was not the result of dissemination of organisms from the aortic lesions. The bacilli in the aortic lesions showed bizarre forms with a tendency to branching.

22. **Extensive Thiersch Skin Graft.**—The case reported by Gatch has two points of chief interest: the large size of the area grafted, and the demonstration, by repeated trials, that only homografts would take in this patient. He was admitted to hospital on Nov. 21, 1909, for flame burns of the back and of the left forearm and hand which he had received fourteen hours before admission. The burn of the back was of the second degree, the others of the first. The area of this burn was 430 square inches. As the total area of the patient's body is about 2,800 square inches, the burn occupied between a sixth and a seventh of his entire cutaneous area. The patient recovered from the immediate effects of the injury rapidly and with little general systemic disturbance. While the sloughs were separating, the wounds were dressed with a single layer of dry gauze, which was left in place for periods of a week or more, and then changed after giving the patient a prolonged warm bath. Absorbent dressings, changed as often as necessary, were placed over the gauze. This dressing proved very clean and comfortable. In less than two weeks the burned surface was covered with healthy granulations. Now followed a long series of attempts to cover the large raw area with skin. None of the isografts applied to this patient lived, though applied under the same conditions as the homografts—practically all of which did take.

Bulletin of the American Academy of Medicine, Easton, Pa.

February

24 Educational Principles Involved in the Combined Course in Arts and Medicine. A. R. Hill, Columbia, Mo.
25 *Is the Profession Losing Its Grip? C. McIntire, Easton, Pa.
26 *Should Universities Grant the Degree of Ph.D. for Graduate Work in the Surgical Sciences? A. E. Hertzler, Rosedale, Kan.
27 *The Cooperation of School Health Departments with Other Health Agencies. E. B. Hoag, San Francisco.
28 *The School System and the Child. A. L. Benedict, Buffalo.

25, 26, 27 and 28. Abstracted in THE JOURNAL, July 16, 1910, p. 243.

Journal of the Tennessee State Medical Association, Nashville

February

29 Manic-Depressive Insanity. J. W. Stevens, Nashville.
30 Surgical Aspect of Calculus in the Kidney. J. A. Crisler, Memphis.
31 Maternal Impressions. H. E. Christenbery, Knoxville.

Journal of Biologic Chemistry, Baltimore

March

32 Formation of d-Gluconic Acid by Bacterium Savastanoi Smith. C. L. Alsberg, Washington, D. C.
33 Cholesterol Bodies in Soils: Phytosterol. O. Schreiner and E. C. Shorey, Washington, D. C.
34 Influence of Urethane in Production of Glycosuria in Rabbits After the Intravenous Injection of Adrenalin. F. P. Underhill, New Haven, Conn.
35 *Sources of Error in the Folin Method for the Estimation of Creatinin. A. E. Taylor, Berkeley, Cal.
36 *The Cutaneous Elimination of Nitrogen, Sulphur and Phosphorus. A. E. Taylor, Berkeley, Cal.
37 Estimation of Urea. A. E. Taylor, Berkeley, Cal.
38 Composition of Invertase. A. P. Mathews and T. H. Glenn, Chicago.
39 Method for Estimation of Reducing Sugars. S. R. Benedict, New York.
40 Study of Autolysis by Physicochemical Methods. R. Chiari, Vienna.
41 Nucleases. P. A. Levene and F. Medigreceanu, New York.

35. **Estimation of Creatinin.**—The greatest defect of this method, in Taylor's opinion, lies in the absence of a standard light. If the Folin method is to attain to that general usefulness and reliability to which its intrinsic qualities entitle it, he says that a light must be found, standard in quality and intensity. Under ideal conditions, the method will enable one to estimate 10 milligrams of creatinin with an accuracy of plus or minus 0.1 milligram. Under desirable conditions of concentration, urinary pigmentation and light, the plus or minus error in the estimation may be at least a milligram. Accurate estimations that can close agreements in the deter-

minations of creatinin are greatly to be desired because in this case we deal with a fundamental metabolism, the full understanding of which we are just beginning to appreciate.

36. **Cutaneous Elimination.**—Taylor presents the results of two metabolic experiments, in which, for the purpose of securing normal data, the attempt was made to secure quantitative determinations of the magnitudes of the cutaneous eliminations of nitrogen, sulphur and phosphorus. He found that in all probability the cutaneous elimination of nitrogen and sulphur is, under constant conditions of work, clothing and temperature, a constant for each individual, and in no wise dependent on the total metabolism of nitrogen and sulphur in the individual. The cutaneous elimination of phosphorus may be said to be *nil*.

Wisconsin Medical Journal, Milwaukee

February

42 Enlargements of the Liver. L. M. Warfield, Milwaukee.
43 Symptoms and Diagnosis of Extrauterine Pregnancy. V. F. Marshall, Appleton.
44 Extrauterine Pregnancy. W. E. Fairfield, Green Bay.
45 Clinical Significance of High Blood-Pressure; Its Causes and Treatment. P. McKittrick, Eau Claire.
46 *The Nursing Mother from the Baby's Standpoint. A. W. Myers, Milwaukee.

46. Abstracted in THE JOURNAL, July 23, 1910, p. 344.

Archives of Pediatrics, New York

February

47 Effects of Vaccines. S. McC. Hamill, Philadelphia.
48 *Food Reactions in the Infant's Stomach Compared with Those in Vitro. D. M. Cowie and W. D. Lyon, Ann Arbor, Mich.
49 Methods of Examining Infants' Stools. Their Value. F. B. Talbot, Boston.
50 *A Method of Dealing with Ill-Nourished Infants. F. H. Glazebrook, Morristown, N. J.
51 Arthritis Deformans in Children. A Case of Still's Disease. E. C. Jones, Philadelphia.

48. Abstracted in THE JOURNAL, May 21, 1910, p. 1710.

50. An article by H. D. Chapin on the same subject appeared in the *Medical Record*, Feb. 18, 1911, and was abstracted in THE JOURNAL, March 4, 1911, p. 693.

Journal of the Minnesota State Medical Association, and the Northwestern Lancet, Minneapolis

March 1

52 Magnesium Sulphate in Tetanus. C. J. Holman, Mankato.
53 *Septic Thrombosis of the Sigmoid and Lateral Sinus, Complicating Case of Double Mastoiditis. F. C. Todd, Minneapolis.
54 Meckel's Diverticulum. D. Balfour, Rochester, Minn.
55 Medical Inspection in Schools. C. H. Keene, Minneapolis.

53. **Septic Thrombosis of the Sigmoid and Lateral Sinus.**—This is a case of double acute suppurative otitis media, complicated by mastoid abscess on one side, followed later by mastoid abscess and septic sinus thrombosis on the other side. Operations required: first on one mastoid, then on the other, with resection of the internal jugular and opening of the sinus. Complete recovery ensued.

Pennsylvania Medical Journal, Athens, Pa.

February

56 *Recent Progress in Medical Sociology. C. H. Miner, Wilkes-Barre.
57 *Relative Value of the Various Methods for the Determination of Functional Kidney Sufficiency. B. A. Thomas, Philadelphia.
58 Surgical Aspects of Infantile Spinal Paralysis. DeF. Willard, Philadelphia.
59 Temperature in Enlarged Tonsils and Adenoids. J. H. McCready, Pittsburg.
60 A Method of Removing the Faucial Tonsil, Using a Soft Silver-Wire Snare. A. A. MacLachlan, Pittsburg.
61 The Tonsil and the Singer. M. D. Ritchie, Pittsburg.
62 Indications for Removal of the Faucial Tonsils, and Dangers Connected with This Procedure. C. C. Sandels, Pittsburg.
63 *Treatment of Croupous Pneumonia. G. W. Norris, Philadelphia.
64 *Public and Private Aspects of the Pneumonia Question. W. C. White, Pittsburg.
65 A Case of Progressive Universal Pneumonia with Recovery, Presenting Some Very Unusual Features. W. H. Mercur, Pittsburg.
66 The Business Career of the Physician and Some Suggestions as to Safe Investments. L. Ott, Philadelphia.

56. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1580.

57. Abstracted in THE JOURNAL, Nov. 19, 1910, p. 1838.

63 and 64. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1671

Monthly Cyclopedia and Medical Bulletin, Philadelphia

February

67 Acromegaly: Pierre Marie's Disease. P. E. Launois and M. H. Cesbron, Paris.
68 *Should the Pharmacopeia Contain Only Useful and Efficient Drugs? N. S. Davis, Chicago.
69 *What Constitutes a Useful Drug, and Shall the Preparations of a Useful Drug Be Limited to One or Two? J. M. Anders, Philadelphia.
70 *Revision of the United States Pharmacopeia. J. P. Remington, Philadelphia.
71 What Is the Attitude of the Medical Profession Toward Osteopathy? J. M. Taylor, Philadelphia.
72 Acne Rosacea and the Sebaceous Glands. J. C. Rommel, Philadelphia.
73 Anesthesia from the Anesthetist's Standpoint. H. W. Dingman, Grand Rapids, Mich.
74 *Galactagogue Action of the Thymus, Corpus Luteum, and the Pineal Body. I. Ott and J. C. Scott, Philadelphia.

68 and 70. Abstracted in THE JOURNAL. May 28, 1910, p. 1812.

69. **What Constitutes a Useful Drug?**—According to Anders, a valuable drug is: (1) One that has a definite physiologic action, which is applicable to the relief of a disordered physiologic process; (2) one that by repeated careful clinical observations has been found to be followed in the majority of instances by a definite clinical result, care being taken to exclude the influence of accessory circumstances; and (3) one that is used for the purpose of diluting a substance of too great concentration or making palatable an otherwise disagreeable remedy. In accordance with this definition, it has seemed to Anders that the following, among other agents, should be omitted from the official remedies to be found in the U. S. Pharmacopeia: Anthemis, berberis, calamus, calendula, cassia fistula, chimaphila, chirata, chondrus, cypripedium, eriodictyon, eugenol, eupatorium, fluidextractum berberidis, fluidextractum calami, fluidextractum chimaphilæ, fluidextractum chiratæ, fluidextractum cypripedii, fluidextractum eriodictyi, fluidextractum eupatorii, fluidextractum frangulæ, fluidextractum geranii, fluidextractum grindeliæ, fluidextractum lappæ, fluidextractum matico, fluidextractum mezerei, fluidextractum rubi, fluidextractum sabinæ, fluidextractum staphisagriæ, fluidextractum tritici, fluidextractum viburni opuli, frangula, geranium, gossypii cortex, gossypium purificatum, granatum, grindelia, hedeoma, lappa, manna, marrubium, mastiche, matico, matricaria, mezereum, myristica, oleum betulæ, oleum coriandri, oleum hedeomæ, oleum myristicæ, pilulæ aloes et mastiches, pimenta, prunum, rubus, sabina, safrolum, staphisafria, styrax, tinctura calendulæ, triticum, ulmus, viburnum opulus, xanthoxylum and zea. On the other hand, among unofficial substances that he thinks might be advantageously added to the U. S. Pharmacopeia are diacetylmorphin and silver vitellin.

74. **The Galactagogue Action of the Thymus.**—In experiments on the goat with the glands containing internal secretions, Ott and Scott found that the thymus and corpus luteum increased the quantity of milk fourfold in five minutes. The ovary minus corpus luteum had no effect. Infundibulin is still the most powerful galactagogue, increasing the secretion of the milk one hundredfold. The amount of butter fat was about the same in the augmented secretion by thymus, corpus luteum and infundibulin, though occasionally it was increased. Intravenous injection of this body increases the secretion of milk eightfold. The pineal gland, as in previous experiments, was rubbed with distilled water and filtered. Normal saline solution, according to Biedl, has been shown to increase the secretion of milk.

American Journal of Urology, New York

January

75 The Normal and Pathologic Posterior Urethra and Neck of the Bladder. L. Buerger, New York.
76 Technic of the Hyperemic Treatment of the Urethra by Hot Sounds. M. Porosz, Budapest, Hungary.
77 Roentgenologic Examinations of the Kidneys. A. Holding, Albany, N. Y.
78 Treatment of Acute Gonorrheal Epididymitis. J. C. Spencer, San Francisco.
79 Position Drainage in Suprapubic Prostatectomy. H. J. Scherck, St. Louis.

Journal of the Missouri State Medical Association, St. Louis

February

80 Sixteen Syphilitic Patients Treated with Salvarsan. M. F. Engman, W. H. Mook and J. W. Marchildon, St. Louis.
81 *Keeping Track of Sponges. T. F. Lockwood, Butler.
82 Tuberculin Therapy. G. C. Crandall, St. Louis.

83 A Plea for the Merit System in the Selection of Officers and Employees for the State Hospitals of Missouri. M. A. Bliss, St. Louis.
84 Surgical Treatment of Exophthalmic Goiter. W. Bartlett and W. P. Glennon, St. Louis.
85 Examination of Children. H. S. Marsh, Tipton.
86 Dedication of the Barnard Free Skin and Cancer Hospital, St. Louis. W. E. Fischel and C. H. Huttig, St. Louis.

81. **Keeping Track of Sponges.**—The plan outlined by Lockwood, briefly, is as follows: In making gauze sponges, have a numeral sewed in colored silk or stamped with indelible ink, of a harmless character, in one corner of each sponge. This renders the figures indestructible in sterilizing the sponge. Have three packages of sponges arranged as follows: first package must contain small sponges, fifteen in all, numerals running from 1 to 15. This completes the first series and the package is to be labeled A 15. The letter A designates the size of sponges contained in the package and the numeral the number it contains. The second series must be a size larger than the first, running from 1 to 10, labeled thus: B 10. Third series is still larger than B, running from 1 to 5, labeled C 5. This package should contain five large sponges or napkins used both for absorbing sponges and viscera towels in abdominal sections. Have sponges made uniformly, each package maintaining a regulation size. The letter on the package indicates the size of sponges contained therein.

When the operation is finished, whether minor or major, count out the sponges by actual notation and if any number be lacking to complete the restored series, never cease searching until the missing number is found. If one or more packages of sponges are used in an operation it is as easy to complete the count in several series as it is in a single series, except that it takes more time. If all the sponges are not used in any one package in a given operation, count out the unused sponges along with the rest to complete the full number in that particular series. While this may seem strenuous and an undue precaution imposed on the surgeon, yet Lockwood believes that such methods would completely avert the possibility of leaving sponges and other materials in the abdominal cavity. A similar numbering plan is suggested for instruments.

Journal of the Kansas Medical Society, Kansas City

February

87 Medical Inspection of School Children. H. N. Moses, Salina.
88 Cancer of the Uterus. O. D. Walker, Salina.
89 Diagnosis of Diseases of the Nervous System. O. S. Hubbard, Parsons.
90 The Diagnosis and Treatment of Submucous Fibroid. A. Smith, Parsons.
91 Medical Jurisprudence. W. H. Clark, Hoxie.
92 Drug Reform. L. E. Sayre, Lawrence.
93 A Case of Gangrenous Stomatitis Probably Caused by the Bacillus Necrophorus. F. Campbell and F. W. Shaw, Kansas City.

Archives of Internal Medicine, Chicago

February

94 *Diagnostic Value of the Orthodiagram in Heart Disease. J. G. Van Zwaluwenburg and L. F. Warren, Ann Arbor, Mich.
95 *Studies of Malaria in Panama. Treatment of Blackwater Fever. W. Brem, Cristobal, Canal Zone.
96 *Meralgia Paresthetica Due to Pressure of the Corset. J. L. Miller, Chicago.
97 *Energy Metabolism of Mother and Child Just Before and Just After Birth. T. M. Carpenter, Boston, and J. R. Murlin, New York.
98 *The Ameboid Activity of Megaloblasts. W. S. Thayer, Baltimore.
99 *Function of the Sino-Auricular Node. A. E. Cohn and L. Kessel, New York.
100 *Biology of and Immunity Against the Bacillus of Leprosy. C. W. Duval and F. B. Gurd, New Orleans.
101 A Blood Crisis Occurring with Primary Sarcoma of the Stomach. L. H. Briggs, Oakland, Cal.
102 *Technic of the Cammidge Reaction and of the Substance Giving Rise to the So-Called Typical Crystals. J. C. Roper and R. G. Stillman, New York.
103 Allergy. C. E. Von Pirquet, Baltimore.

94. **The Orthodiagram in Heart Disease.**—After having examined sixty patients Van Zwaluwenberg and Warren believe that they are justified in the conclusion that an abnormal index is an early evidence of the increase in size of one or more chambers of the heart and may occur before such increase can be demonstrated by other means; that a decrease in the index results from left ventricular hypertrophy and dilatation, and an increase indicates a dilatation of the auricles with or without hypertrophy of the right ventricle. In combinations of these two antagonistic factors the index will depend on the predominance of the one or the other. The wide variation shown in valvular diseases should make the index valuable in the diagnosis of doubtful or combined lesions and they hope that the smaller fluctuations found associated with renal conditions may sometime be of diagnostic and prognostic value.

95. This paper was referred to in an editorial on blackwater fever in THE JOURNAL, Feb. 18, 1911, p. 514.

96. **Meralgia Paresthetica.**—In Miller's case, a circumscribed area of tenderness was located below and slightly outward from the anterior superior spine of the ilium; surrounding this was an ill-defined area of hyperesthesia; no analgesia, anesthesia or thermalgesia. In examining to determine if pressure of the clothing could be responsible for the trouble, it was noted that the lower edge of the corset hooked over the anterior superior spine, pressing into the thigh so that when standing erect it was with difficulty that the finger could be introduced between the corset and the thigh. Following instructions, the patient cut out a portion of the corset over this region. Within a few days relief was marked, and after the lapse of ten days the attacks of pain entirely disappeared, only slight numbness remaining. The woman returned to her work and reported three months later that, except for slight numbness, she considered herself cured. It was suggested that she purchase a new corset of the same style as that previously worn. After wearing this a few days, the pain again recurred, and the patient of her own accord cut out a piece of the corset as before, the pain promptly disappeared and now after the lapse of five months she complains only of slight numbness.

97. **Energy Metabolism of Mother and Child.**—In agreement with results previously obtained on the dog, Carpenter and Murlin find that the curve of total energy production of mother and child suffers no deflection at birth. The extra metabolism of the pregnant woman at the culmination of pregnancy, due in part to the accessory structure as well as to the fetus, is just equaled by the extra metabolism set up in the new-born child by exposure of its body to the outside world, and in the mother by activity of the mammary glands, etc. The energy metabolism, expressed per unit of weight, of the pregnant woman is about 7 per cent. less than that of the same woman newly delivered, and about 4 per cent. more than that of women in complete sexual rest. Expressed per unit of surface ($12.3^3\sqrt{W^2}$) the energy metabolism of the pregnant woman is specifically higher than that of women in complete sexual rest, probably because of a higher metabolism in the uterus and because of more rapid conduction of heat through the abdominal wall. In the newly delivered and nursing mother the metabolism is likewise higher per unit of surface than that of either the pregnant or normal woman. This is probably due in part to the activity of the mammary glands and in part to the dynamic action of protein liberated by the involution processes. The energy metabolism of the new-born child expressed per unit of weight and found by subtracting the metabolism of mother alone from that of mother and child together, is two and a half times that of the mother. Expressed per unit of surface (same formula) the energy metabolism of the new-born child is not greater than that of the nursing mother, but is higher than that of a woman in complete sexual rest.

98. **Ameboid Activity of Megaloblasts.**—In the study of the blood in a case of Addisonian anemia of a chronic course, Thayer observed characteristic ameboid movements in a megaloblast. This observation is apparently the first of this nature. This megaloblast showed typical ameboid movements. Small round pseudopodia were projected into which the colored protoplasm flowed in the same manner seen with the ordinary intestinal amebas. Slight changes in shape occurred at times in the nucleus. The movements of the cell were marked, strikingly like those in leukocytes, and entirely unlike the gradual changes of shape sometimes seen in red blood-corpuscles in the fresh specimen. The pseudopodia that projected were exactly like those seen in the movements of a polymorphonuclear leukocyte; that is, on the edge of the

cell there appeared sometimes very small round buds, several at a time, which coalesce and form larger processes. The absolute homogeneity of the protoplasm did not allow Thayer to observe the rolling motion so clearly as in the case of *Amœba coli* or a leukocyte containing granules. At times, however, the movement was really rather active. Thayer concludes that in the early stage of development represented by the megaloblast, the red blood-corpuscle is, probably, a cell with powers of active progression.

99. **Function of the Sino-Auricular Node.**—The experiments reported by Cohn and Kessel were done on the excised hearts of small dogs, which had been perfused with Locke's solution. The plan differed from the other series of experiments, in that, first, an attempt was made to excise only the known node-bearing area, and, second, to show that even multiple incisions did not influence the rate (except to accelerate it), while a final incision which cut away the window that had been made on three sides, in ten of sixteen experiments did successfully cause the stoppage of the entire heart. In two the stoppage is not noted in the protocol, though the rates fell from 114 to 81.9 in one, and from 121.5 to 63 in another. In three others the node is probably not excised, and in a fourth final incision was not made. The experiments gave a fairly uniform result. The authors conclude that normal impulse formation takes place and normal rate is produced in the sino-auricular node.

100. **Bacillus of Leprosy.**—Pure cultures of *B. leprœ* have been obtained by Duval and Gurd directly from the infested leprous tissue on a variety of special media including tryptophan and glycerinated blood-agar without first growing them in the presence of amebas and their symbiotics. From two cases of leprosy they have cultivated in pure growth the specific organism directly from the tissues on Novy-McNeal rabbit blood-agar to which 1 per cent. glycerin had been added. As a rule, multiplication of *B. leprœ* on artificial medium takes place slowly, but once the growth has started it can be readily accelerated by frequent transplantation. They have succeeded in cultivating *B. leprœ* from the cutaneous nodules in eight cases of leprosy, two cases of nasal discharge, and from the experimental lesion in a number of monkeys and white and Japanese dancing mice. That the cultures are leprosy bacilli, and not some other acid-fast species, has been definitely proved by cultural and animal tests. Their experimental study on the virulence and viability of leprosy bacilli shows the necessity of early diagnosis and the need of strict segregation of certain types of the disease. The length of time *B. leprœ* will live and retain its infectiousness outside the body indicates plainly the risk to a community in allowing leper patients at large, in particular those who have open lesions. Especially dangerous from the standpoint of source of infection are the patients discharging the bacilli in the secretions from the nasal mucous membrane. These patients are a constant menace to those with whom they associate because of the possibility of indirect transmission of the bacilli that are unconsciously deposited on articles about the household where the leper resides. The mere fact that the organism lives for so long a time outside of the animal body may, the authors believe, explain why the disease continually reappears in households that have harbored a leper. The bacilli escaping from the infected individual, who for months may not be aware of his malady, are a constant menace to others of the household or to subsequent tenants, even though it be years after the direct source of infection has been removed.

The animal experiments do not tend to support the view that leprosy may reside for years in the human body before manifesting any outward signs of the disease. Direct inoculation from man to man may occur, but it is the exception. On the other hand, in the light of present knowledge the indirect evidence of transmission is by far the more significant. Their investigations also confirm the belief that the mucous membrane of the nasal pharynx is the port through which the bacilli gain entrance to the body, as well as the chief source from which infection spreads. The results of animal experimentations demonstrate the fact that direct communication of the disease may take place from individual to individual without the presence of the bed-bug or other parasites as intermediate hosts. In the examination of blood from patients suffering from leprosy the serum has been shown to contain specific antibodies of different kinds against certain constituents of the *B. leprœ*. In addition to the presence of specific bodies, they have demonstrated that complement is present in normal quantities. Agglutinins are present, though not in very large amounts. The opsonic content is probably affected at different stages of the disease, but with reference to the activity of this body their researches have so far not proved conclusive.

102. **Technic of the Cammidge Reaction.**—That the "C" reaction proposed by Cammidge, for the demonstration of a characteristic substance in the urine of patients suffering from diseases of the pancreas, does not rest on a sound scientific basis, is the claim made by Roper and Stillman, as not all the glycuronic acid is removed in every instance by the technic of this reaction. The formation of the typical crystals is due to the presence of glycuronic acid. As this substance is present in the urine of persons in normal health, and is increased in amount in many conditions in no way associated with disease of the pancreas, the demonstration of these so-called typical crystals can have no diagnostic value.

American Journal Orthopedic Surgery, Philadelphia

February

104 *Osteochondritis Dissecans: Its Nature and Relation to Formation of Joint Mice. A. H. Freiberg and P. G. Woolley, Cincinnati.
105 *Relaxation of the Annular Ligament of the Ankle-Joint as a Cause of Weak and Flat Foot. J. T. Rugh, Philadelphia.
106 *Osteophytes of the Os Calcis. J. D. Griffith, Kansas City, Mo.
107 *Operation for the Relief of Anterior Metatarsalgia, Including Morton's Disease. A. M. Forbes, Montreal.
108 *Treatment of Flat-Foot. E. H. Bradford, Boston.
109 Vaccines in Operative Treatment of Tuberculous Joints. W. W. Plummer, Buffalo, N. Y.
110 *Uses and Limitations of Vaccine Therapy in the Management of Arthritis. C. F. Painter, Boston.
111 *Value of Tuberculin in Tuberculous Joint Diseases. J. Ridlon, Chicago.
112 Antogenous Vaccines in the Hospital for Ruptured and Crippled. V. P. Gibney and G. E. Bennett, Washington, D. C.
113 Operation for Treatment of Anterior Dislocation of the Head of the Radius. G. G. Davis, Philadelphia.
114 Trigger-Finger. F. J. Cotton, Boston.
115 The 1909 Epidemic of Aute Anterior Poliomyelitis in Nebraska. H. W. Orr, Lincoln, Neb.
116 Juxta-Epiphyseal Fracture of the Upper End of Femur. Importance of the Use of Position in Its Treatment. F. H. Albee, New York.

104 to 108, 110 and 111. Abstracted in THE JOURNAL, July 2, 1910, pp. 49, 50 and 51.

Old Dominion Journal of Medicine and Surgery, Richmond

February

117 The Need of More Practical Examinations by State Boards of Registration in Medicine. R. C. Cabot, Boston.
118 *Medical Treatment of Pneumonia. A. Newlin, Philadelphia.
119 Chronic Diarrhea: Diagnosis and Treatment. G. A. Ezekiel, Richmond.
120 *New Facts Concerning Poliomyelitis—Its Etiology, Early Diagnosis and Treatment. T. A. Williams, Washington, D. C.

118. Abstracted in THE JOURNAL, Feb. 4, 1911, p. 375.

120. Also published in the *Journal of the South Carolina Medical Association*, November, 1910; *Monthly Cyclopedia and Medical Bulletin*, November, 1910, and the *Medical Press and Circular*, Dec. 14, 1910.

Virginia Medical Semi-Monthly, Richmond

February 24

121 Surgical Treatment of Anasarca Due to Kidney Disease. G. P. LaRoque, Richmond.
122 Modification of Mothers' Milk. G. Baughmann, Richmond.
123 Care and Treatment of Crippled Children. R. T. Taylor, Baltimore.
124 Physiologic Action of Certain Electric Currents. C. M. Hazen, Richmond.
125 Ignorance. L. W. Ely, Denver.
126 A Plea for the Trained Nurse as Anesthetist. A. L. Bruton, Norfolk.

Long Island Medical Journal, Brooklyn, N. Y.

February

127 *Diseases of the Stomach and Duodenum from a Surgical Standpoint. W. J. Mayo, Rochester, Minn.
128 Diagnosis and Treatment of Hyperthyroidism. A. T. Bristow, Brooklyn.
129 American Surgery. L. S. Pilcher, Brooklyn.
130 The Use of Salvarsan. J. M. Winfield, Brooklyn.

127. Also published in the *New York State Journal of Medicine*, January, 1911, and the *St. Paul Medical Journal*, January, 1911.

Atlanta Journal-Record of Medicine

February

131 Transfusion of Blood. H. P. Cole, Mobile, Ala.
132 Chronic Appendicitis. W. C. Cook, Columbus, Ga.
133 A Case of Cardiospasm. C. A. Dexter, Columbus, Ga.
134 Diphtheritic Paralysis. Syphilis of Nasal Passages and Ear. Gunshot Wound of Eye. T. E. Mitchell, Columbus, Ga.
135 Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.

Albany Medical Annals

February

136 Rural Hygiene. A. W. Freeman, Richmond, Va.
137 Quarantine, Isolation and Disinfection. W. A. Howe, New York.
138 The Tuberculosis Campaign. C. W. Fetherolf, New York.
139 Public Health and the Dental Profession. W. G. Ebersole, Cleveland.

Detroit Medical Journal

February

140 Iodin Sterilization of Skin. G. H. Palmerlee, Detroit.
141 *The Medical Profession Must Change Its Tactics. W. J. Robinson, New York.
142 Value and Significance of the Wassermann Test. R. G. Owen, Detroit.
143 Have We a New Mind Cure Based on Science? S. Bell, Detroit.
144 Influence of Glandular Pharyngeal Tissue in the Causation of Rheumatism and Endocarditis. B. R. Shurly, Detroit.
145 Therapeutics of the Circulatory System. W. J. Wilson, Jr., Detroit.

141. Published in THE JOURNAL, Jan. 14, 1911.

Western Canada Medical Journal, Winnipeg

February

146 Ureteral Calculus. A. Paling, Winnipeg, Man.
147 A Case of Lipoma of the Scrotum. F. Lachance, Winnipeg, Man.

American Medicine, New York

February

148 The West Coast of Norway for Health and Recreation. H. L. Shively, New York.
149 Legal Obligations of Physicians. J. I. Green, New York.
150 A Case of Hysterical Hemiplegia Due to Autosuggestion. C. W. Burr, Philadelphia.
151 Asthma Relieved by an Intranasal Operation. C. J. Imperatori, New York.
152 Studies in Gynecology. F. A. Rhodes, Pittsburg.
153 Feet. R. G. Moore, New York.
154 Unusual Effects from Gunshot Wounds of the Skull. H. Crutcher, Roswell, N. Mex.
155 Physiologic vs. Anatomic Results Following Gynecologic Operations. G. W. Jarman, New York.
156 Brief Summary of Arsenic Treatment of Syphilis Antedating Salvarsan. E. Ehlers, Copenhagen.

Medical Fortnightly, St. Louis

February

157 Clinical Aspects of Urogenital Tuberculosis. L. W. Bremerman, Chicago.
158 Gases in Their Relation to the Body. A. L. Benedict, Buffalo.
159 Nosology. C. F. Wahrer, Fort Madison, Iowa.

Vermont Medical Monthly, Burlington

February

160 An Epidemic of Diphtheria at Vermont Industrial School. G. F. B. Willard, Vergennes, and E. H. Buttles, Burlington.
161 Paranoia. H. D. Bone, Waterbury.
162 Purpura Hemorrhagica. C. W. Peck, Brandon.

Woman's Medical Journal, Cincinnati

February

163 First Aid to the Injured Eye. M. Buchanan, Philadelphia.
164 Medical Experiences in the Philippine Islands. M. S. Bailey, Manila.
165 Physiology and Chemistry of Digestion. G. Lusk, New York.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 25

1 Differential Diagnosis in Cases of Albuminuria. H. French.
2 *Digitalis in Heart Disease and Dropsy with Fibrillation of the Auricles. J. D. Windle.
3 *Two Cases of Death from Postanesthetic Acid Intoxication. G. Brown.
4 Radium in Cancer. C. J. Morton.
5 *Curative Influence of Roentgen Rays in Malaria. B. Skinner and H. W. Carson.
6 Thyroid Extract in Carcinoma. E. H. Jones.
7 "Sensory Tetany," "Vasomotor Tetany," Acroparesthesia, and Raynaud's Symptoms. F. P. Weber.
8 *Operations for Calculus in the Male Bladder. W. F. Haslam.

2. Digitalis in Heart Disease.—Dropsy in cases of heart disease, in which the auricles are in a state of "fibrillation" and functionally inactive, Windle says, is present in a large proportion of cases of severe heart failure, whatever the nature of the underlying lesion may be. He has found the benefit derived from the administration of digitalis in cases of severe heart failure variable, even when classical indications for its use are present. In some patients improvement is rapid and maintained—the heart decreases in size, the edema quickly disappears; its power for good is limited—improvement occurs to a certain extent, and then comes to a standstill; again, particularly in cases of mitral stenosis with regular pulse, and those resulting from arterial disease, digitalis is often impotent or even harmful—the heart continues to dilate, and dropsy increases under its use. The mode of action of digitalis in fibrillation is as yet imperfectly understood. There are good reasons for the supposition that the drug acts by depressing the conductivity of the *a-v* bundle; its full effect is to block the passage of stimuli from auricle to ventricle; cut off from the influence of the auricle, the ventricle beats an independent rhythm. However this may be, the fact remains that the character of the heart's action under the full influence of digitalis in this condition is comparable in every way to that occurring in complete heart-block. The rhythm of the heart at times becomes regular, with a rate of 40 or thereabouts; further, a frequent effect of continued full doses is the occurrence of "coupled heart beats." The weaker beat of this coupled rhythm, which occurs with notable regularity, arises in response to a ventricular stimulus, and it is supposed that a condition of complete heart-block is present.

While the majority of cases of fibrillation respond in a marked manner to digitalis, it is found, as a matter of experience, that reaction varies under different circumstance of etiology and rate of pulse. Cases which respond most certainly and rapidly are those resulting from old rheumatic lesions, in which the rate of pulse is not greatly above normal, and symptoms of failure arise gradually. There is another type of case, also of rheumatic origin, in which fibrillation occurs suddenly, and heart failure soon becomes extreme; in these cases the pulse is usually rapid and reaction is uncertain. Fibrillation not uncommonly ensues in the course of arteriocardiosclerosis; generally the reaction is slight or absent, occasionally the heart slows to some extent, but improvement in the general symptoms is not proportionate. Exceptionally typical reaction occurs. Generally speaking, Windle says, improvement in cases of this kind is proportionate to the degree of slowing of the heart; and digitalis must be given in sufficient doses to reduce the rate at least to the normal, and in most cases considerably lower, to get the best results. On commencing treatment, 15 minims of the tincture should be given four times a day until the pulse slows to from fifty to sixty a minute, which it will do, as a rule, within a week. In most patients the improvement with this rate of pulse is maintained, when the same dose should be given three times a day and its effect watched. In others the case hangs fire; the drug should then be pushed until its full physiologic effect on the pulse is produced. The evidence of this is either a regular slowing of the heart to about forty beats a minute, or the occurrence of coupled heart beats. A pulse of fifty or over is always characteristically irregular; when the rate falls below fifty, it exceptionally becomes regular, the number of heart beats being the same as the pulse. More frequently, the full effect is shown by the occurrence of coupled beats; these are readily recognized on auscultation—two heart beats follow quickly on each other, succeeded by a long pause, the first beat is strong, the second short and feeble.

From a large number of observations, Windle has found that the total amount of tincture of digitalis required to produce runs of coupled beats or regular slowing is, on the average, 450 minims—that is, in about ten days with doses of 15 minims. Digitalis should be stopped when long runs of coupled heart beats or regular slowing occur; no further good can follow its continued use; the full effect is transient; within two or three days the pulse quickens and is again

characteristically irregular. The drug should now be given again in increasing doses of from 10 to 15 minims, three times a day, until the pulse slows to a rate approximating that at which the double beats previously occurred; it is with this rate of pulse that the patient will generally be at his best. The guide for dosage during treatment is the effect on the heart, and this can be determined by auscultation, the rate and rhythm of the beats furnishing the necessary indications.

3. **Death from Postanesthetic Acid Intoxication.**—Since the occurrence of these cases reported by Brown, the urine of every child in the Liverpool Royal Infirmary is tested for acetone, on admission; if this be present the operation is delayed, if possible, till the acetone has been eliminated, and treatment is continued after the operation. Inasmuch as an individual deprived of carbohydrates excretes acetone and diacetic acid, but the exhibition of carbohydrates rapidly causes the disappearance of these substances, glucose is employed as a prophylactic. All patients admitted to surgical wards for operation (usually admitted 2:30 p. m.) receive (1) glucose 1 dram, at 4, 6 and 8 o'clock on the day of admission and at 4, 6 and 8 o'clock on the following morning. If the child is 8 years or older, 2 drams are given. (2) Sodium bicarbonate, in the strength of 1 dram to 4 ounces of water, is given instead of plain "wash-out" before operation. If acetone is present in the urine on admission: (1) glucose is continued at two-hourly intervals during the day-time; (2) the sodium bicarbonate is given every two hours during the day and every four hours at night. Liquid glucose is more satisfactory than solid, and children take it as well as a sweet. Sodium bicarbonate solution is frequently taken by children only after a struggle. Since the initiation of this measure no serious symptoms have developed in any patient; but the treatment has not been in force long enough to give a reliable comparison, though the post-anesthetic vomiting has been less.

5. **Roentgen Rays in Malaria.**—The effect of heat applied over the splenic area in relieving the pain attendant on an attack of malarial fever gave Skinner and Carson the idea that the Roentgen rays also might have a therapeutic action as the immediate effect of their similar application. That these conjectures were not without base is evidenced by the eleven cases reported. The application of Roentgen rays in cases of malarial fever relieves splenic pain and reduces recent engorgement; the temperature falls and does not usually rise again, and recovery is not attended by the anemia usually present in patients treated with quinin. The authors have not had to fall back on quinin in patients treated by the Roentgen rays, while they have had patients who resisted quinin and yielded promptly to the rays (quinin being discontinued).

8. Also published in the *Lancet*, Feb. 25, 1911.

Lancet, London

February 25

9 *Immunity Reaction in Diagnosis, Especially of Tuberculosis and Syphilis. W. d'E. Emery.
10 *Operations for Calculus in the Male Bladder. W. F. Haslam.
11 *Treatment of Pneumonia. D. B. Lees.
12 Education of the Deaf. M. Yearsley.
13 Examination, with Negative Results, of the Central Nervous System in a Case of Cured Human Trypanosomiasis. F. W. Mott.
14 Salvarsan in Syphilis. C. F. Marshall.
15 The Physiology and Pathology of the Assimilation of Albumin. S. A. Arany.
16 *A Case of So-Called Insusceptibility to Vaccination. J. D. Staple.

9. **Immunity Reaction in Diagnosis.**—Quantitative estimations of the strength of a serum in antibodies, as estimated by the Bordet-Gengou reaction, are not, in Emery's opinion, applicable in all cases, at least so far as tuberculosis is concerned. What it may be expected to give is a measure of the amount of tuberculous substances in the serum, which in association with the clinical facts, may have great value in diagnosis, and perhaps also in prognosis and treatment. He examined thirty-four individuals with diseases other than tuberculosis and healthy persons. The average complement absorption time was 18.1 minutes, the maximum 35 minutes, and the minimum 2½; this shortened time was present in but three persons who were not thought to be tuberculous. In tuberculous individuals the most usual thing is to find the absorption time greatly reduced. In Emery's cases the average time was 7.4 minutes, and times of less than 2½ minutes were found in 25 out of 56 serums examined, or 44.6 per cent. Thus, he says, if we regard an absorption period of 2½ minutes as affording the criterion for the presence or absence of the test, we find it in 44.6 per cent. of the tuberculous and 8.8 per cent. of non-tuberculous individuals. If we take 5 minutes, we find it in 66 and 11.7 per cent., respectively. Further, tuberculous persons do not always give a shortened absorption period. Very short absorption times are usually encountered in chronic cases in which the patients are doing well, and in quite general terms are, in definite tuberculosis, longer in cases in which the patients are progressing rapidly. The process, therefore, has some value in giving a clue to the prognosis. But it is very far from being absolute. Thus it appears that a prolonged absorption time may be due (1) to the presence of antibodies in minute amounts only (this occurs in health or in tuberculosis, and as a rough general rule indicates a progressive disease); and (2) to the presence of this inhibiting substance (this does not necessarily indicate a bad prognosis). Judging from the few cases in which Emery has been able to put the matter to the test, he concludes that a prolonged absorption time in a case of undoubted tuberculosis indicates a high degree of susceptibility to tuberculin, whether applied to the skin or injected; but a patient with a shortened time will also react.

10. Also published in the *British Medical Journal*, Feb. 25, 1911.

11. **Treatment of Pneumonia.**—Lees presents a review of well-known facts and does not offer anything new.

16. **So-Called Insusceptibility to Vaccination.**—The "one-mark vaccination" is strongly condemned by Staple. It is perfectly obvious, he says, that if a child is vaccinated in only one place there is less likelihood of the operation being successful than if it were performed in the orthodox number of places. Staple regrets that when a certificate of insusceptibility is filled up the practitioner is not required to certify that the child has been unsuccessfully vaccinated in three or four marks on three separate occasions.

Journal of Obstetrics and Gynecology of the British Empire, London

February

17 Indications for, and Technic of, Cesarean Section and Its Alternatives, in Women with Contracted Pelves, Who Have Been Long in Labor and Exposed to Septic Infection. A. Routh.
18 *An Experimental Study of the Anaphylactic Theory of the Toxemia of Pregnancy. R. W. Johnstone.
19 Acute Torsion of Normal Ovaries and Fallopian Tubes with Hematosalpinx. J. N. Stark.
20 Three Cases of Cesarean Section in Non-Contracted Pelvis. H. Simson.
21 Keratinizing Adeno-Carcinoma of the Uterus. Miss Ivens.
22 Adenomyoma in a Tuberculous Fallopian Tube. Miss Ivens.
23 Chorio-Epithelioma of the Uterus Preceded by Vesicular Mole and Accompanied by Unusual Nervous Symptoms. Miss Ivens.

18. **Placental Anaphylaxis.**—The idea underlying Johnstone's theory of placental anaphylaxis was that some alien protein might pass from the fetus or placenta into the maternal circulation, and supersensitize the mother; and that a subsequent transference of the same substance after a suitable interval might account for the onset of convulsions and other symptoms. His experiments were confined to the use of the placenta only. They fall into five groups. In the first group he used an extract of placenta from an eclamptic patient. In the second group he carried out similar experiments in twelve female rabbits with the juice of normal healthy placenta. In the third group, the conditions were made as realistic as possible, pregnant animals being injected with the juice of placenta from another of the same species. In the next two groups Johnstone used powdered placenta suspended in normal saline solution. Anaphylactic symptoms were obtained by the use of normal placenta juice in eight out of twelve rabbits. This indicates that human placenta juice contains

some complex protein body which is capable of acting as a toxin for other animals. No results followed the use of eclamptic placenta juice. So far as it goes, this may be taken to lend support to the view that the toxic element had passed out of the placenta into the patient's body. No result followed the use of extracts of animals of the same species. Finally, no results followed the use of powder of placenta, either human or of animals of the same species.

The question remains: Were such anaphylactic symptoms as were obtained, due to a placental toxin, or to the small quantity of blood-serum inevitably present? It is impossible to wash all the blood out of a placenta by any method yet devised—either the simple one employed in Johnstone's experiments, viz., washing the minced placenta in a muslin bag under running water, or the more elaborate, but not more effectual one, of injecting water into the umbilical vein immediately after birth. The results of these experiments, particularly the failure to confirm Anderson and Rosenau's results with homologous placental extract, in Johnstone's opinion appears to support the view that there is no evidence of anything of the nature of anaphylaxis, so far as we at present understand that subject, in the commoner manifestations of the toxemia of pregnancy.

Journal of Tropical Medicine and Hygiene, London

February 15

24 A Case of Sleeping Sickness Occurring in Northern Nigeria. D. Alexander.
25 Betanaphthol and Thymol as Anthelmintics. B. Nicol.

Clinical Journal, London

February 22

26 Common Gynecologic Affections. T. G. Stevens.
27 *Absence of Abdominal Respiratory Movement as an Indication of Pericarditis. W. E. Wynter.

27. Absence of Abdominal Respiratory Movement an Indication of Pericarditis.—The sign suggested by Wynter is inhibition of the action of the diaphragm, indicated by suppression of normal abdominal respiratory movement. In acute pericarditis, on the other hand, the cessation of phrenic action is bilateral and, consequently, absence of abdominal respiratory movement is as obvious as in abdominal disorders, though other abdominal manifestations, such as muscular rigidity and general tenderness, are lacking. The author says that when the front of the body is fully exposed, the stillness of the abdomen is very striking, suggesting peritonitis, unless, as sometimes happens, there is inspiratory recession, which might mislead unless the want of correspondence with the movement of the upper chest is noticed. The inertness of the diaphragm is not merely inferred, but by Roentgen-ray screen examination can be actually observed, the midriff mounting high into the thorax and exhibiting no contraction; in some instances there is an actual rising of a quarter of an inch with each inspiration. In one case the contents of the upper abdomen, such as the kidneys and opaque masses in the intestines, could be seen to participate in this upward respiratory movement. Concomitant and consequent phenomena are: a tendency to dilatation of the hollow abdominal organs, especially the stomach; collapse and loss of function in the lower lobes of the lung; slight upward displacement of the heart, and of the organs beneath and in contact with the diaphragm. Loss of abdominal movement, as a sign of pericarditis, is the more valuable in that it may precede and outlast the other indications and so afford grounds for anticipatory or retrospective diagnosis. The condition affords a reasonable explanation of the cyanosis and dyspnea so usual in the complaint, and of the upright position so commonly assumed by the patient, the former expressing the effect of respiration restricted to the function of the upper lobes of the lungs, and the latter pointing to an unconscious effort on the part of the patient to utilize the weight of the abdominal viscera to depress the passive diaphragm and enlarge the thoracic area. Restriction of abdominal movement is apparently more marked in fibrinous than in effusive pericarditis, movements being more productive of local irritation in the former than in the latter condition, as is the case in other serous sacs, such as the pleura and peritoneum.

Medical Press and Circular, London

February 22

28 Empyema. T. R. Whipham.
29 Salvarsan in Syphilis. W. D. O'Kelley.
30 *Surgical Aspect of Glycosuria and Diabetic Gangrene. C. A. Morton.
31 *Treatment of Heroinomania and Morphinomania. P. Duhem.
32 Two Cases of Abscess of the Liver Complicating Appendicitis. J. J. Clarke.

30. Surgical Aspect of Glycosuria.—Amputation for diabetic gangrene is favored by Morton, but he says that we ought to consider carefully in what cases of diabetic gangrene amputation is called for. If the area is small, and the gangrene is not spreading, he sees no reason why amputation should be done, unless the process of separation of the dead tissue is so tedious that the patient desires to have an operation which may hasten matters. If so, a thorough removal of sloughs may suffice; but if the gangrene is spreading, or is associated with great pain in the living margin of tissue, or there is pyrexia due to septic absorption from the gangrenous area, then the question of amputation must be considered seriously. If the most scrupulous care is taken as to antiseptic details, and spinal anesthesia is used, the risk of amputation should not be great. Morton reports three cases:

CASE 1.—Dry gangrene of the great toe, due to atheroma of the arteries associated with diabetes. S. C., aged 66, was admitted to the General Hospital in October, 1907, with dry gangrene of the great toe. The necrotic area in part separated, and was in part removed, but the gangrene spread to the next toes, and the neighboring part of the foot. No pulsation could be felt in either the posterior tibial or the dorsalis pedis artery in either foot, and the radials were thickened. The popliteal arteries could be felt pulsating on both sides. Glycosuria persisted during the six months the man was in the hospital, but considerably decreased on antidiabetic diet. Amputation was performed through the knee joint under spinal anesthesia which acted well. The popliteal artery was very rigid and thick, and the arteries of the amputated leg were found to be extensively affected by atheroma. The lumen of the posterior tibial was almost completely blocked, and that of the anterior was very small. Primary union occurred except at one minute point and the patient was in no way the worse for the operation.

CASE 2.—Moist gangrene of all the toes, of an inch of the foot close to them, and a large patch of gangrene extended down the sole almost to the heel. Amputation was performed successfully through the knee-joint under spinal anesthesia.

CASE 3.—Spreading moist gangrene of foot associated with perforating ulcers. Amputation through knee-joint was successful.

31. Heroinomania and Morphinomania.—Instead of attempting to wean the patient in five or six days, Duhem devotes two or three weeks or more to the suppression of injections. He encourages the elimination of toxic products, the disengorgement of the glandular canals, and the renovation of the epithelial tissues by all possible means. He makes use of any symptomatic treatment for which there may be an indication.

Annales de Gynécologie et d'Obstétrique, Paris

February, XXXVIII, pp. 65-128

33 Retroperitoneal Cysts in or Around the Ovary. Three Cases. J. Vanverts and H. Paucot.
34 *Fibromas Complicating Pregnancy. J. Mouchotte.
35 Experimental Research on Starch-Producing and Starch-Digesting Activity of the Placenta. (Sur l'activité amylogénétique et amylolytique du placenta.) S. Delle Chiage.
36 Metabolism During Pregnancy. (Recherches sur les échanges organiques chez les femmes enceintes.) C. J. C. van Hoogenhuyze and A. Ten Doeschate. Commenced in No. 1.

34. Fibromas Complicating Pregnancy.—Recent discussions of this subject in French medical societies have shown that the pregnancy generally runs a normal course to term, notwithstanding the presence of the fibroma. Only when serious disturbances are threatening is it necessary to interfere. At the same time it is conceded that the disturbances must not be allowed to reach such a stage that operative measures are liable to come too late. Mouchotte's patient was pregnant for the first time at the age of 38. The uterus was found studded with fibromas. A large one was attached to the uterus only by a pedicle, seeming to belong to some other

organ, especially as a loop of intestine had become interposed between the uterus and the body of the big fibroma. The serious symptoms seemed to be characteristic of intermittent hydronephrosis, owing to the compression of the left ureter, sigmoid flexure and the iliac blood-vessels which complicated the picture. When the abdomen was opened, the general fibromyomatous degeneration of the uterus and the slight possibility of effectual hemostasis, induced Mouchotte to remove the entire uterus as the only safe procedure. He emphasizes in conclusion that the outcome with fibroma of the pregnant uterus depends less on the size of the tumor than on its location, the accidents being more or less serious according to the organs compressed by it.

Annales des Maladies des Org. Génito-Urinaires, Paris

February 1, XXIX, No. 3, pp. 193-288

37 *Operative Treatment of Calculus in the Ureter. Fabricannte.
38 Endoscopic Discovery of Deformity in the Urethra. J. Chadzynski.
39 Catheters Knotted in the Urethra or Bladder. (Bougies nouées dans l'urètre ou dans la vessie.) O. Pasteau.
40 *Supernumerary Kidney. (Rein surnuméraire constaté pendant la vie.) A. Isaya.

37. **Calculus in Ureter.**—Fabricannte advocates, as giving the best access, a transverse incision around the iliac crest, parallel to Poupart's ligament. In very favorable cases in women, the stone might be removed through the vagina.

40. **Supernumerary Kidney.**—Isaya's patient was a woman of 27 with recurring attacks of pain since childhood. A tumor was discovered which proved to be a third kidney. But all three kidneys were apparently normal, and the pains were remedied by fixation of the transverse colon which was found sagging. All symptoms ceased after the operation. Isaya reviews the few similar cases of supernumerary kidneys on record.

Archives Générales de Chirurgie, Paris

December, IV, No. 12, pp. 1211-1320

41 *Ambulatory Splint for Fractured Leg. (Traitement des fractures de jambe par la "marche directe.") G. Worms and P. Hamand.
42 Ulceration of Jejunum After Gastro-Enterostomy. P. D. Wilkie.
43 *Chloroform Accidents. E. Vidal. Commenced in No. 11.
44 Large Fibroma of Upper Jaw. P. Mauclaire.

January, V, No. 1, pp. 1-116

45 *Inversion of the Vagina Following Hysterectomy. P. Guibal.
46 Bone and Joint Complications of Malta Fever. D. Zezas.
47 *Drainage of Ascites into Subcutaneous Cellular Tissues. P. Mauclaire.

41. **Ambulatory Treatment of Fractured Leg.**—Worms and Hamand have applied Delbet's walking splints in a number of cases of oblique fracture of the leg or Dupuytren's fracture, and describe here the good results in eight typical cases. They illustrate the technic; the principle is to support the leg by plaster splints from a point above the fracture close to the condyle above, and below just above the bulge of the malleoli. These points sustain the two rigid splints which support the leg in the place of the fractured bones, the weight of the body thus being transmitted from the upper end to the lower end of the leg, leaving the focus of the fracture in repose. All that is necessary is a splint of plaster on each side of the leg, with a horizontal plaster bandage wound around just below the knee and another at the ankle including the heel. The simplicity of the technic and the excellent outcome are extolled. They apply the apparatus immediately after the accident, especially with simple fracture permitting easy and rapid reduction. If the limb is already much swollen, it is better to wait and use other means for immobilization until the effusion has been absorbed. Even compound fractures can be treated by the ambulatory dressing, they assert, if asepsis can be assured and the patient is not allowed to walk on the limb except with great caution until after the soft parts have healed.

43. **Treatment of Chloroform Accidents.**—Vidal concludes from study of the literature and his own experience that the main point in treating chloroform accidents is to supply the heart with a non-toxic fluid. He thinks that artificial respiration will generally answer the purpose when the trouble is merely arrest of breathing. Oxygen is required only exceptionally, but if the heart has stopped beating he advises (1) exposing at once a vein close to the heart and removing 300 gm. of blood by pressure on the chest; the vessel is then ligated; (2) keeping up artificial respiration constantly; (3) then injecting slowly, toward the heart, through a needle inserted in an artery on the right side, from 80 to 100 gm. of tepid Locke's solution; (4) then waiting two minutes before doing anything else; (5) then squeezing the heart through the diaphragm, superficially and slowly, not over thirty times a minute, keeping this up for one minute then (6) waiting for two minutes; (7) giving another injection of Locke's solution (only 60 gm.) and resuming massage after the fluid has been in the heart for two minutes. This outline of treatment is the only logical method, he thinks, and the success that has been obtained with other methods, he is convinced, was due to the fact that unconsciously some of these principles were followed. His formula for Locke's solution is sodium chlorid, 9 gm.; calcium chlorid, 0.2 gm.; potassium chlorid, 0.2 gm.; sodium carbonate, 0.2 gm.; glucose, 1 gm., and distilled water, 1,000 c.c. The benefit from this intracardiac lavage has been instructively shown in some recent communications, he states, that of Depage reporting the instantaneous revival of the heart, which forty-five minutes of massage had been unable to accomplish. He warns against too hasty massage, as that would force the non-toxic fluid out of the heart. The aim is to save for the heart the whole benefit of its first effort.

45. **Prolapse of the Vagina.**—Guibal discusses means to prevent and remedy inversion of the vagina, especially after hysterectomy, giving the details of six cases on record with one from his own experience. In his case he was obliged to excise part of the vagina and restore the perineum which had been lacerated at the last childbirth, twenty-five years before. Three months after vaginal hysterectomy, the vagina became completely inverted. He gives the details of the complicated operation which restored approximately normal conditions.

47. **Dangers of Drainage of Ascites into the Subcutaneous Cellular Tissue.**—Mauclaire has treated six patients by inserting a T drain, the vertical branch projecting into the pelvis while the horizontal branches extended in the subcutaneous tissue. This provided a means for the ascitic fluid to escape into the cellular tissue, but the outcome was not good. Four of the patients rapidly grew weaker and soon succumbed. Another seemed to bear the drainage without disturbances but succumbed to progressive cachexia. The sixth patient recovered; the ascites in this case was tuberculous and the laparotomy alone might have sufficed for the cure. He wore the drain for three months without inconvenience and the ascites did not recur. It is possible that in the four fatal cases the ascitic fluid accompanying the cirrhosis or cancer was so toxic that it injured the patient when reabsorbed. Possibly the outcome might have been better if a smaller drain had been used instead of the No. 15 or 16 Charrière that had been selected. Mauclaire thinks that the possible toxicity of the ascitic fluid and the danger of grafting tuberculosis or cancer should compel caution in these efforts for autodrainage of ascites.

Archives des Maladies du Cœur, Etc., Paris

February, IV, No. 2, pp. 65-144

48 *Precordial Dulness in Heart Disease in Children. (Matité précordiale dans les cardiopathies infantiles.) P. Nobécourt and R. Voisin.
49 Purpuric Diathesis Revealed by Casual Trauma. (Purpura localisé de l'avant-bras.) H. Gougerot and H. Salin.
50 Gonococcus Endocarditis. (Endocardite infectieuse des sigmoïdes aortiques avec anévrysme perforant d'un sinus de Valsalva au cours d'un rhumatisme blennorragique. Ictère terminal.) F. Moulsset and J. Chalier.

48. **Dulness Over the Heart in Cardiac Disease in Children.**—Nobécourt and Voisin compare the percussion findings in thirty-six children with various cardiac defects; in two the trouble was congenital, in two others of tuberculous origin. In the latter cases the heart area was little if any increased, and soon subsided to less than the normal area. Necropsy disclosed the heart much atrophied. In twelve cases the trouble was an acute cardiopathy, and in the others a chronic condition. If the apex is found at the same point on repeated examinations, while the general area has diminished, adherence to the chest wall may be assumed. In the course of an acute heart affection, an increase in the size of the precordial dulness may indicate restriction of fluids, venesection,

digitalis or epinephrin. Strict repose should be enforced during convalescence as long as the heart area is unduly large. Reduction in the area of the dulness is one of the last signs of improvement under heart tonics. It is not necessary, they add, to percuss the entire heart; determination of the apex and of the point of intersection of the upper margin of the liver with the right margin of the cardiac dulness is all that is generally necessary. These points can be readily percussed and the variations in the horizontal diameter instructively determined.

Journal de Chirurgie, Paris

January, VI, No. 1, pp. 1-136

51 *Cheiloplasty. H. Morestin.

51. **Cheiloplasty.**—Morestin gives an illustrated description of a number of typical cases in which all or part of the upper and lower lip was restored, with a number of technical points learned from his experience.

Presse Médicale, Paris

February 11, XIX, No. 12, pp. 105-112

52 An Auto-Observation of an Auto-Operation for Inguinal Hernia Under Jonnesco's Spinal Anesthesia. A. Fzalcou.
53 Subacute Ependymitis with Hydrocephalus and Lesions Suggesting Syringomyelia. H. Claude, C. Vincent and J. Levy-Valensi.

February 15, No. 13, pp. 113-120

54 *Value of Tincture of Iodin for Antisepsis. P. Reclus.

54. **Tincture of Iodin and Antisepsis.**—Reclus congratulates the profession on the present vogue of tincture of iodin which he regards as the most easily managed of all antiseptics, the least dangerous and the most powerful. He cites a number of instances from his own experience to sustain this, calling attention in particular to the ideal functional outcome in injuries of the hands treated with the tincture of iodin. The skin heals supple, the joints are not at all stiff and the skin grows out to cover the bare bone when conditions permit it in the slightest. The outcome is almost equally good when the iodin is not applied until after signs of local inflammation and even of septicemia have developed. In one case the hand had been crushed by a keg holding 500 liters and two days had elapsed, the tissues putrefying, and signs of general infection were already installed before the tincture of iodin was applied, and yet functioning was restored, except for disarticulation of the forefinger, in a manner little short of miraculous. In another case, he says, he operated only by a sort of professional reflex action as the patient seemed moribund from fulminating gangrene from a scrotal tumor resulting from puncture of a hematocele by unskilled hands. Reclus made the incision with the actual cautery which lighted the gas in the focus; it burned with a blue light. He then cleared out the clots and gangrenous tissues and painted the walls of the enormous cavity with tincture of iodin. It was a surprise to find the man alive the next day; by the end of forty days the immense cavity had nearly healed and the man is now completely restored to health.

Revue de Chirurgie, Paris

February 10, XXXI, No. 2, pp. 145-280

55 *Operative Treatment of Typhoid Angiocholecystitis. E. Quénu.
56 Treatment of Skull Wounds on the Battle Field. (Du traitement des blessures du crâne dans les formations de l'avant.) Weltzel.
57 *Ultimate Outcome of Dislocation of the Shoulder. (Pronostic éloigné des luxations de l'épaule.) L. Imbert and G. Dugas.
58 Treatment of Arterial and Arteriovenous Hematomas. C. Monod and J. Vanverts. Commenced in No. 1.

55. **Operative Treatment of Typhoid Gall-Bladder Disease.**—Quénu published two years ago a work on this subject, reviewing forty-five operations that had been done on the gall-bladder during typhoid fever or convalescence therefrom. He here completes the list to date and tabulates the details of the sixty-seven operations. Only one of the patients recovered of the twelve treated by an incomplete operation, while thirty-three recovered of the forty treated by cholecystostomy and all but two of the ten with cholecystectomy. [The only cases cited from THE JOURNAL are those of Lavinder and Prince.] The general conclusion from this material is that cholecystostomy alone answers in nearly every case. Only when the gall-bladder tissue is too friable, or when there is perforation or ulceration, is its removal indicated.

57. **End-Results of Dislocation of the Shoulder.**—Imbert and Dugas have been investigating the present condition of fifteen patients, the only ones they have been able to trace to date out of eighty patients treated for dislocation of the shoulder in the last few years. Only four of the fifteen were found in a satisfactory condition—all the others complained of more or less disturbance in the use of the arm. The patients were between 30 and 70, but the four with a satisfactory outcome were between 34 and 58. Delay in reduction of the dislocation does not seem to be the decisive factor for the outcome; in six of the cases with the poorest ultimate outcome reduction had been done in one hour, the same day or the second day. The reduced dislocation had been given careful treatment in all cases, in one for five months, in others for four months, etc., by experts in electric and mechanical therapeutic measures. In all the severer cases there had been periarthritis and the persisting pain and atrophy of the muscles indicate participation of the nerve terminals in the trouble. From the standpoint of industrial insurance it is important to bear in mind that even under the best conditions functional disturbance and pain may persist for several months or may become permanent so that it is impossible to judge definitely of the case under several months. Persisting incapacity is generally due to the periarthritis, and only exceptionally to traumatic paralysis of the brachial plexus.

Revue de Gynécologie, Paris

February, XVI, No. 2, pp. 97-208

59 *Metrorrhagia in Young Girls. (Etude histologique de la muqueuse utérine dans une forme particulière de metrorragie observée chez des jeunes filles.) A. Siredey and H. Lemaire.
60 Cysts in the Kidney and Cystic Disease of the Kidney. (Notes sur les kystes rénaux et péri-rénaux.) E. Papin and P. J. Christian.

59. **Metrorrhagia in Young Girls.**—Siredey and Lemaire report four cases of rebellious metrorrhagia in girls from 14 to 20 in which no benefit followed the usual measures and a cure was obtained only by curetting the uterus. The scrapings showed similar lesions in each—a tendency to adenomatous production, of obscure origin. The hemorrhages had kept up for several months but there were no other symptoms beyond the anemia.

Revue de Médecine, Paris

February, XXXI, No. 2, pp. 81-176

61 *Pathogenesis and Treatment of Beriberi. G. Barbézieux.
62 Part Played by the Nitrogen of Ammonia in Production of Urea. (Recherches sur la contribution de l'azote ammoniacal à la formation de l'urée dans l'organisme.) H. Labbé.
63 *Test Diet in Estimating Digestion. (Sur l'épreuve de la digestion par le régime.) J. Cecikas.

61. **Beriberi.**—Barbézieux writes from Indo-China to present arguments in favor of the assumption that beriberi is not a distinct morbid entity but a syndrome for which disturbances in the general nutrition are responsible. It develops only in the predisposed, that is, in those in whom the nervous system has been modified by some inherited diathesis. Acute rheumatism, malaria and dysentery may prove the occasional cause, equally with poverty, neurasthenia, overwork, grief, insufficient food or puerperal or alimentary intoxication. The sodium salts and especially sodium salicylate have not only a symptomatic efficacy but seem to arrest the degeneracy of the central or peripheral nerve tissue and to favor the regeneration of the nerve cells. The sodium salts, he says, seem to facilitate the exchanges and the interaction of the intracellular metallic ions. His experience has confirmed the preponderant rôle of sodium salicylate in the treatment and cure of beriberi. In a typical case reported, the beriberi followed acute rheumatism and sodium salicylate was given by subcutaneous injection for the rheumatism and the beriberi subsided with it. Since then he has been applying the method systematically in the clinic. The neuro-arthritic diathesis seems to be the most frequent and important factor, and this he has found extremely common in tropical countries.

63. **The Test Diet in Estimating Digestion.**—Cecikas has studied on a number of volunteers and patients the findings with Schmidt's test diet. His experience shows the value of the method in organic affections of the digestive tract, but his conclusions differ from Schmidt's in regard to the interpretation of the findings with functional disturbances.

XUM

Semaine Médicale, Paris

February 22, XXXI, No. 8, pp. 85-96

64 *Auscultation Sign of Glandular Disease in the Chest. (Le signe de D'Espine dans le diagnostic de l'adénopathie trachéobronchique de l'adulte.) M. Roch.

64. Vertebral Auscultation in Diagnosis of Bronchial Adenopathy.—THE JOURNAL, March 9, 1907, page 909, described D'Espine's sign of disease of the glands in the chest in children, namely, the peculiar resonance found in auscultation along the spine as the child speaks, or, preferably, whispers. He makes the test by having the child say the French words for 333, *trois cent trente- trois*. Roch has been studying this sign in adults, and states that it is proving equally instructive at all ages. He found it pronounced in thirty patients, mostly those with pulmonary tuberculosis. The peculiar resonance is the result of the transmission of the sound waves from the bronchial tree to the chest wall by intermediation of the diseased glands. Bending the head forward brings the trachea closer to the spine and this magnifies the characteristic findings. In two cases the findings gradually became negative as enlarged glands in the neck subsided to normal size; he accepts this as evidence that the bronchial glands share in a process affecting the submaxillary glands. With differential vertebral auscultation it must be borne in mind that the bifurcation is higher proportionately in the child than in the adult. Roch discusses the possible sources of error, but concludes from his experience that the sign is destined to prove of great clinical value. It is possible, he adds, that it may not only reveal incipient tuberculous lesions, but may disclose cancerous involvement of the glands in question in certain cases. [Gray's article on vertebral auscultation, to which Roch refers in the course of his article, was reviewed in these columns Aug. 22, 1908, page 709.]

Archiv für Verdauungs-Krankheiten, Berlin

February, XVII, No. 1, pp. 1-118

65 Changes in Gastric Mucosa with Gastric Ulcer. (Veränderungen der Magenschleimhaut beim Ulcus ventriculi rotundum.) F. Crämer.
66 *Movable Cecum. N. D. Straschesko.
67 Indican in the Urine. (Harnindikan.) W. v. Moraczewski.
68 Gastric Motor Functioning with Pyloric Ulcer and Spastic Stenosis. (Störung der Magenmotilität bei Ulcus ad pylorum und die spastische Pylorusstenose.) S. Jonas.
69 Injections of Fibrolysin in Treatment of Umbilical and Epigastric Hernia. F. Ehrlich.
70 The Gastric Ferment Tests. (Klinischer Wert der Magenfermentproben.) E. Fuld.
71 *Volvulus of the Stomach. (Volvulus des Magens. Nebst einem Beitrag: Röntgenbeobachtung des Magens beim Brechakt.) S. Mühlfelder.
72 Torsion of Hour-Glass Stomach. (Achsendrehung der Pylorushälfte eines angeborenen Sanduhrmagens.) A. Schüle and P. Walther.

66. Movable Cecum.—Straschesko reports from Kiev the case of a man of 34 subject to sudden transient attacks of abdominal pain without rise in temperature, but accompanied by distention of the abdomen, nausea and obstinate constipation, the attacks of colic sometimes terminating in transient diarrhea. Palpation gave different findings at different times, and the operation revealed an abnormally movable cecum with defective development of the ascending colon and a single mesentery for both ileum and cecum. The colic is the result of torsion or kinking and the following local peritonitis; the latter may entail adhesions which further complicate the picture and there may be incarceration. The syndrome is often mistaken for chronic appendicitis, but appendicectomy does not cure it. In Straschesko's case the patient was permanently freed from all trouble from this source by cecopexy, the cecum being fastened in the right iliac fossa with six catgut sutures to the parietal peritoneum. Palpation of the intestines is the best means to detect the trouble, Roentgen-ray examination confirming the findings. The kinked bowel became incarcerated in a fatal case recently reported by Heiler. Movable cecum does not cause symptoms in the majority of cases; it is comparatively common, Hausmann having collected 143 cases in six years.

71. Volvulus of the Stomach.—Mühlfelder gives the details of twenty-three cases on record and of a case in his own experience. All ages are represented in the list; most of the patients had had gastric disturbances for some time before, some even relating that they had had transient subjective sensations previously, like those of the definite volvulus. It is inevitably fatal in a few hours or days unless it retrogresses or is surgically corrected. In some cases the abdomen was opened, but the true condition was not recognized even then, and the patients succumbed. There is no pathognomonic symptom; the main point is to bear in mind the possibility of volvulus and weigh carefully all the minor phenomena observed. In one case a man of 41 suddenly developed vomiting, with signs of obstruction of the bowel, distention of the abdomen, retching and regurgitation of food and drinks and a slowly increasing tumor in the left hypochondrium. The operation revealed that the large tumor, studded with patches of fresh fat necrosis and bound down by fresh adhesions, was the stomach; the transverse colon lay above it, and in replacing the colon in its normal position the stomach twisted around, showing that what had been supposed to be the front aspect was in reality the posterior. The patient recovered. In the personal case reported, a girl of 20 had had recurring appendicitis. The pains in the side and stomach, cough and vomiting after eating persisting after appendicectomy were ascribed to incipient tuberculosis, and tuberculin treatment was commenced. The epigastrium was tender, and on suspicion of complicating gastric ulcer, feeding was restricted to nutrient injections for a time, during which the pains in the stomach were arrested. On resuming fluid food, the vomiting returned with weak heart action and small pulse. The heart was entirely on the left side and the area of dulness differed on different examinations in a puzzling manner. There was no protrusion or pathologic resistance in the stomach region, and the patient could eat fluid food, and stool followed an enema. Suddenly an acute attack of tetany was observed. This referred the disturbances to the stomach, but the knowledge came too late, the patient dying in a second attack a few hours later; necropsy revealed the volvulus of the stomach. Mühlfelder seeks to explain the mechanism of volvulus and of the vomiting act, especially vomiting with gastroptosis as a factor in the volvulus.

Beiträge zur klinischen Chirurgie, Tübingen

January, LXXI, No. 3, pp. 575-846

73 *Fracture of the Malleoli. W. Bergemann.
74 *Diverticulum in the Esophagus. A. T. Jurasz.
75 *Operative Treatment of Pancreatic Disease. P. Bode.
76 Vertical Posterior Retrocolic Gastro-Enterostomy. (Gastroenterostomia v. Hacker-Kausch.) W. Katz.
77 *Slanting Gall-Bladder Incision. (Mein schräger Gallenblasenschnitt.) W. Kausch.
78 *Dovetail Method of Opening into the Knee. (Ein neues Operationsverfahren zur schonenden Eröffnung des Kniegelenkes.) M. Kirschner.
79 *Hour-Glass Stomach. (Zur Klinik und Therapie des Sanduhrmagens.) H. Finsterer.
80 *Goiter Operations. (Zwei Tausend Strumektomien.) A. Oberst.
81 Chondromas in Joints. (Gelenkchondrome.) E. Rehn.
82 Enlargement of the Cecum. (Typhlektasie.) F. Hofmeister.

73. Treatment of Fractured Malleolus.—Bergemann thinks that all the advantages are on the side of an adhesive plaster splint for a fractured malleolus. This permits proper functional treatment, obviates healing in a defective position, and the ultimate outcome is as good, he declares, as with Bardenheuer's extension treatment without its drawbacks, healing being complete much sooner and with less trouble for the patient. The correction by the adhesive plaster dressing is supplemented by traction from a broad piece of elastic webbing drawn around the sole and hooked to one of a row of hooks set in the anterior crossed broad strip of adhesive plaster. This permits graduation of the elastic traction, and the final results are good, as he shows by the tabulated details of twenty cases. Three illustrations show the exact technic advocated.

74. Diverticulum in the Esophagus.—Jurasz reports a typical case of a pharyngo-esophageal diverticulum resulting from pressure from within on a defect in the muscular coat. Analysis of the similar cases on record and the experiences with this case confirm the advantages of gastrostomy as a preliminary to the radical operation on the diverticulum which, especially with Lexer's technic for care of the stump, ensures a primary and permanent cure.

75. Operative Treatment of Pancreatic Disease.—Bode analyzes sixteen operative cases; the operation was done on account of cysts in the pancreas in two cases, for cancer in

one, for acute suppuration in the pancreas in three, for chronic pancreatitis in five, and for hemorrhage in the pancreas in five cases. This material is reviewed in detail, especially from the standpoints of etiology, diagnosis and technic. His observation has convinced him that necrosis of the pancreas is not a special affection, but merely one symptom that may be encountered with various affections of the pancreas, the result of inflammation or hemorrhage. Fat necrosis is found most constantly in connection with hemorrhage, probably on account of the fact that the accumulating blood destroys the epithelium and membrane, allowing the pancreatic secretion to get into the tissues between the acini. He warns against puncture for an assumed pancreatic cyst, with the abdomen unopened, as too dangerous to be attempted. Trauma was responsible for the hemorrhage in the pancreas in only one of the cases, but straining at stool may have been the causal factor in another case. Alcoholism was probably a cooperating factor in the others, and a tendency to obesity in some. Most writers describe the syndrome of hemorrhage in the pancreas and of acute suppurative pancreatitis as practically identical. In the cases reported by Bode the symptoms of hemorrhage came on suddenly after from two to six weeks of symptoms suggesting peritonitis or appendicitis. When the appendix was exposed, however, it was found intact in some of the cases, but signs of fat tissue necrosis pointed to the pancreas as the source of trouble. Only one patient recovered in this group of pancreas hemorrhage cases.

77. **Slanting Gall-Bladder Incision.**—Kausch makes the incision between and parallel to the course of the nerves in the abdominal wall, as he shows in two illustrations. If the umbilicus is in the way he excises it. All the soft parts are incised along the same line. The ultimate outcome seems to be good, as he has found on later examination of forty-eight patients.

78. **Dovetail Incision to Obtain Access to the Knee Joint.**—Kirschner describes his method of cutting into the extensor apparatus of the knee so as to open up the joint wide, while afterward restoring approximately normal strength to the extensor apparatus. Instead of a horizontal or median incision, he cuts out a trapezoidal indenture like the ordinary dovetailing method of fitting joists and boards together. A number of illustrations show the exact technic with which he is able to saw the extensor apparatus, the patella or upper part of the tibia to cut out the miter-shaped piece. The flap turned back permits ample access to the joint, while when the flap is replaced the broader trapezoidal top fits into its bed, conferring unusual strength and resistance on the severed parts. This dovetailing method may prove useful for other operations elsewhere, as for temporary resections, transplantation of muscles and tendons, etc., but he advises careful following of the directions he has formulated after extensive research on the cadaver. He adds that a little practice on the cadaver will much facilitate the cutting of the miter in bone. The method is scarcely adapted for children on account of possible injury to the epiphysis.

79. **Hour-Glass Stomach.**—Finsterer reports the details of five cases from the Graz clinic and summarizes sixty-six cases from the literature. The mortality has dropped from 100 to 13 per cent. since operative measures were introduced in its management, and this mortality is still declining as surgical treatment is instituted earlier. The indications for the operations are reviewed. He warns against general anesthesia on account of its injuring the stomach still further and possibly entailing acute dilatation.

80. **Two Thousand Goiter Operations.**—Oberst's communication issues from the Freiburg clinic; the patients were mostly from southern Germany and Switzerland, and the interval embraced in the statistics is from 1883 to date. Postoperative tetany developed in seven of the patients, and he emphasizes that every effort should be made to spare the parathyroids the slightest injury. This is easier said than done, he adds; perhaps the best plan is to refrain systematically from any interference with the region in which lies the recurrent nerve, as the parathyroids are generally in this part.

Berliner klinische Wochenschrift

February 13, XLVIII, No. 7, pp. 281-324

83 *Treatment of Morphin Addiction. (Zur Behandlung der Morphinisten.) P. Schroeder.
84 Serodiagnosis of Cystadenoma of the Liver. J. H. Schultz.
85 Inhalation of Epinephrin in Treatment of Acute Catarrh of Upper Respiratory Tract. G. Zuelzer.
86 *Albumin Reaction in Sputum. M. Gantz and R. Hertz.
87 Reciprocal Interaction of Internal Secretions. (Experimentelle Untersuchungen über gegenseitige Wechselwirkungen innerer Secretionsprodukte.) R. Balint and B. Molnar.
88 What Occurs with the Tuberculin Produced in the Body? (Was geschieht mit dem im Körper produzierten Tuberkulin?) J. Geszti.
89 Results with Salvarsan to Date. A. v. Torday.
90 *Left-Handed School Children. (Die Linkshänder in den Berliner Gemeindeschulen.) M. Schaefer.
91 *Urine Reaction in Infants. (Das Wesen der Engel-Turnau'schen Harnreaktion.) F. Boschan.

83. **Morphin Addiction.**—Schroeder has not found the results of sudden and complete deprivation of morphin any more serious than when the drug is tapered off. He gives the details of five typical cases to sustain his advocacy of sudden suppression under constant supervision.

86. Abstracted in THE JOURNAL, March 4, page 702.

90. **Left-Handed Children.**—Schaefer found that 692 of the 17,074 school children examined at Berlin were left-handed. This is a proportion of 4.06 per cent., but the boys nearly twice outnumbered the girls. Inheritance of the tendency was evident in 60.2 per cent. He discusses the anatomic causes for left-handedness, and denounces the present system in vogue which takes no account of the natural instinct to use the left hand as the main instrument, and compels all the children to use the right hand. Instead of training the left hand to expert skill, the training is wasted, he says, on the hand which Nature did not intend to have serve as the main instrument, and which will never attain the skill which the other might have attained.

91. **Reaction in Infant's Urine.**—Boschan's communication was summarized in Abstract 67 in THE JOURNAL, March 11, page 782.

Deutsche medizinische Wochenschrift, Berlin

February 16, XXXVII, No. 7, pp. 289-336

92 Puerperal Self-Infection. F. Ahlfeld.
93 *Herpes Zoster and Kidney Colic. (Beitrag zur Kenntnis der Headschen Zonen.) A. Bittorf.
94 Arsenophenylglyzin in Sleeping Sickness. Scherschmidt.
95 *The "Tuberculin Titer" Test. (Ueber kutane und intrakutane Tuberkulinimpfung unter Verwendung abgestufter Dosen und ihre Bedeutung für die Diagnose der Tuberkulose.) S. Möller.
96 Abdominovaginal Operation for Carcinoma Involving Rectum, Uterus and Bladder. (Zur abdominellen Radikaloperation des Gebärmutterkarzinoms.) L. Seeligmann.
97 *Physical Properties of Drugs in Treatment of Syphilis. J. Traube.
98 Serodiagnosis of Leprosy. (Fehlen freien Komplementes im Blute Lepröser.) J. Eliasberg. (Komplementbindung bei Lepra mit leprösem Antigen.) R. Biehler and J. Eliasberg.
99 Peculiar Pigmentation of Internal Organs of Cameroon Negroes. M. Löhlein.
100 Iodism and Thyroidism. Berg.

93. **Herpes Zoster and Renal Colic.**—Bittorf describes a case in which intermittent hydronephrosis in a wandering kidney induced occasional attacks of colic and during a recent severe attack herpes zoster developed, its location then corresponding exactly to the eleventh dorsal segment. The condition of irritation in the spinal ganglion evidently afforded a predisposition for the herpes zoster. In other cases on record, herpes zoster developed in Head's zone corresponding to the internal organ suffering from a painful affection. With an affection of the aorta, pain and hyperalgesia in the ulnar side of the left forearm may be the most important subjective symptom of the cardiovascular trouble. He has encountered this a number of times with pronounced sclerosis of the aorta.

95. **"Tuberculin Titer" Test.**—Möller has been applying the graduated technic introduced by Ellermann and Erlandsen [mentioned in THE JOURNAL, March 18, 1911, page 856]. His findings in 250 patients confirm those reported by others, but he does not think that any of the tuberculin superficial tests are able to determine positively whether the tuberculosis is active or latent. At the same time, when the tuberculosis is in the first or second stage a reaction to the cutaneous and intradermal tuberculin tests occurs with minute doses, too

small to induce any reaction in the non-tuberculous. Of nineteen patients in this group ten reacted positively to 0.0000002 gm. tuberculin, but 11.2 per cent. of 125 clinically free from tuberculosis gave likewise a positive reaction to this dose. There was a family history of tuberculosis in nearly all these positive cases. He thinks that the reaction in these cases indicates a tendency for the latent tuberculous focus to become active. Every patient giving a positive reaction should be given the benefit of special measures as if already clinically tuberculous, and should be frequently reexamined.

97. **Treatment of Syphilis.**—Traube states that the changes in the physical properties of drugs and in the blood under the influence of the drugs deserve greater attention. He has been studying them with his stalagmometer; this records the number of drops in a given volume of the fluid, comparing them with the standard number of drops of water. His research seems to show that the action of salvarsan is due essentially to its basic and precipitating properties, and he thinks that it may be possible to find other elements possessing the same physical properties and which thus may prove equally effectual in therapeutics while free from the drawbacks of the arsenic compounds. He is convinced that the physical properties of drugs rank in importance over their chemical properties, while chemotherapeutic research seems to have overlooked this fact mostly to date.

Medizinische Klinik, Berlin

February 12, VII, No. 7, pp. 249-288

101 *Treatment of Chronic Catarrh of the Large Intestine. R. Kolisch.
102 Otologic Findings in Reference to Trauma of the Head. (Verwertung otologischer Untersuchungsmethoden bei der Begutachtung Kopfverletzter.) Rhese.
103 Prophylaxis and Treatment of Contractures. P. Zander.
104 *Technic for the Fresh-Air Cure. (Fortschritt in der Liegekur der Lungenkranken.) R. Nöhring.
105 Tonsillotomy or Tonsillectomy? F. Kobrak.
106 Nematode Disease of Plants. M. Schwartz.

February 19, No. 8, pp. 289-326

107 *Senile Chorea. H. Eichhorst.
108 Head's Superficial Temperature Sense. (Ueber Henry Heads Lehre von Temperatursinn der Haut.) A. Goldscheider.
109 Determination of Acidity of Gastric Juice. (Bestimmung der Azidität des Magensafts.) M. Bönniger.
110 Appendicitis at Greifswald, 1901-1910. H. v. Tappeiner.
111 Scaphoid Scapula. (Ein häufig vorkommende Anomalie des Schulterblattes.) W. W. Graves (St. Louis).
112 *Venesection in Treatment of Polycythemia. (Ueber Polyzythämie mit besonderer Berücksichtigung grösserer Aderlässe.) A. Hörder.
113 The Sympathetic Nervous System. (Das vegetative Nervensystem.) A. Frölich.

101. **Chronic Catarrh of the Large Intestine.**—Kolisch concludes his summary of the progress in late years in treatment of catarrh of the large intestine with the assertion that the only progress has been in the dietetic treatment, and this only by the better differentiation of the individual conditions by the functional tests, permitting regulation of the diet to conform to existing conditions. The possibility that the stomach may be primarily responsible for the intestinal trouble should never be forgotten.

104. **Fresh-Air Reclining in Severe Climates.**—Nöhring has the windows of the halls used for fresh-air reclining closed at night and the heat turned on in the morning, so that the floor and walls never get thoroughly chilled through although the big windows are all open to the floor during the day while the patients are reclining there. If the day is dry, he has a temperature as low as 32 F. in the halls but if the weather is damp he does not let the halls get colder than 50 or 52 F. Five years' experience has convinced him that this modification of the rigorous northern climate gives far better ultimate results than attempts to enforce the actual climatic conditions.

107. **Senile Chorea.**—Eichhorst describes two cases of typical chorea in a man of 80, and a woman of 73. In both the chorea developed after emotional stress; in both the chorea was on one side only and the necropsy findings were negative. The man died the fourth week after the onset of the right-sided chorea, and the woman during the fifth year of chronic left-sided chorea. In fifty-three cases of senile chorea on record, emotional stress was cited as a causal factor in 17 per cent.; 25 per cent. of the total fifty-five patients died soon after the onset of the chorea, and it became chronic in 49 per cent. In Bourneville's case, the chorea developing in a woman of 64 continued for twenty-four years. There was more or less mental disturbance in 43.6 per cent. of the cases; in 23.6 per cent. the chorea was unilateral.

112. **Polycythemia.**—Hörder adds another to the seventy or eighty cases on record of primary polycythemia. His patient was a man of 51, healthy until five years ago when enlargement of the spleen began to cause discomfort and a year later the signs of polycythemia became pronounced. Hörder regards the disease as a morbid entity involving the composition and distribution of the blood. Venesection, large amounts of blood being withdrawn, gave constant although transient relief in this case, the number of red corpuscles dropping by three or four millions and the other disturbances becoming attenuated after each blood-letting. It was repeated six times in the course of two months, from 150 to 700 c.c. of blood being withdrawn. The first count showed 10,700,000, with hemoglobin 130 per cent.; the last count, nine days after the fifth venesection, showed 9,500,000 reds.

Münchener medizinische Wochenschrift

February 14, LVIII, No. 7, pp. 337-392

114 *Ovarian Origin of Uterine Hemorrhage in Some Cases. (Wechselbeziehung zwischen Uterus und Ovarien, ein Beitrag zur Behandlung gynäkologischer Blutungen.) M. Henkel.
115 *Albumin (Casein) Milk in Infant Feeding. (Zur Technik und Indikation der Ernährung mit Eiweissmilch.) H. Finkelstein and L. F. Meyer.
116 *Importance of Appetite in Estimation of Stomach Function. (Einfluss des Appetits auf die Magentätigkeit und seine Bedeutung für die funktionelle Magendiagnostik.) O. Fischer.
117 *Importance for Prognosis of Invasion of Blood by Germs. (Prognostische Bedeutung des Uebertritts von Keimen ins Blut.) E. Sachs.
118 *By-Effects of Salvarsan. (Nebenwirkung des Salvarsans.) W. Gilbert and J. Sellei.
119 *Direct Lavage of the Duodenum. (Dirkte Berieslung des Duodenums.) M. Gross.
120 Color Scale for Estimation of Pigmentation. (Entwurf einer Farbenskala zur Bestimmung physiologischer und pathologischer Pigmentierungen.) F. B. Solger.
121 Ovarian Therapy. (Beitrag zur Eierstock-Therapie.) R. Einhauser.
122 *Typhoid Meningitis. (Typhusbazillen in der Zerebrospinalflüssigkeit.) A. Stühmer.
123 *Nascent Mercury in Treatment of Syphilis. F. Hubbes.
124 Infant Consultations, Milk Stations, etc., in Munich. (Zwei Jahre offene Säuglingsfürsorge.) A. Uffenheimer. Commenced in No. 6.

114. **Reciprocal Relations Between Uterus and Ovaries.**—Henkel has had opportunity to examine these relations in 150 operative cases during the last few years. The findings can generally be classified in two groups: those in which there is an unusual number of follicles and those in which they are unusually scanty. In the first group the irritation from ripening of an unusually large number of follicles induces changes in the uterine mucosa which are liable to entail uterine hemorrhage. The hemorrhage in such cases must be regarded as a menstrual phenomenon, as it is the expression of the participation of the uterine mucosa in the abnormally frequent ovarian processes. In such cases partial resection of the ovaries has proved an effectual means of removing the cause for this atypical menstruation. He found that it generally cured also any existing tendency to dysmenorrhea. In the other group, in which the organ is abnormally small and defectively developed, ovarian treatment seems to promote the further development of the ovaries and to cure the tendency to uterine hemorrhage. Palpation usually enables the two forms of ovaries to be distinguished. He makes it a principle to remove the ovaries with the uterus in case of myoma requiring laparotomy; the after-effects were no worse than when the ovaries were left, while the operative results were much better. His idea is that the uterus forms an integral part with the ovaries of the genital apparatus, and that the loss of one or the other destroys the functioning of the one left.

115. **Albumin Milk.**—Finkelstein and Meyer relate their further experiences with the albumin milk and emphasize the fact that it is not a food for healthy infants, and should not be given in conjunction with other food or milk. [The method of its preparation was described in THE JOURNAL, July 2, 1910, page 93.] They summarize here the special indications for this casein food.

116. **Influence of Appetite on Test Gastric Functioning.**—Fischer declares that the ordinary test meal pays too little attention to the appetite; a meal that is more palatable gives a much better oversight of gastric functioning. He has found extremely useful a breakfast in which the patient is allowed to select his beverage from the list: milk, coffee, tea, bouillon and weak lemonade, each 300 c.c. With this is allowed a roll or slice of bread (75 gm. bread), butter 20 gm. and 70 gm. of scraped raw meat, ham or sausage or two eggs or a herring. Comparative tests with this and the ordinary test breakfast showed that the "appetite breakfast" supplied much better information in regard to the secretory and motor functioning than the ordinary test breakfast.

117. **Conditions in Which Germs Pass Into the Blood.**—Sachs points out that the prognosis is very different when the germs are forced into the blood by some mechanical influence or primary absorption. The organism is generally able to conquer the germs invading the circulation in these cases. Conditions are different when there is chronic absorption of the germs and they are found to be proliferating in the blood; this indicates extra virulence.

118. **By-Effects of Salvarsan.**—Gilbert injected 0.2 gm. of salvarsan into the left gluteal muscle of a 9-year-old girl with parenchymatous keratitis; there was slight spastic paresis in the right leg and the Wassermann reaction was positive, although the parents denied syphilis. At the age of 6 there had been an obscure nervous attack and the paresis was possibly the sequel of a syphilitic meningitis at that time. Eighty-one hours after the injection the child was found unconscious in collapse, and epileptiform seizures developed, increasing in number and severity, with pulse 160, extreme cyanosis and foam at the mouth, so that a fatal outcome seemed inevitable, but the child gradually recovered in four or five days. If the collapse had occurred in the night, it is scarcely probable that the child would have been saved. Gilbert adds that slight paresis suggesting a possibility of meningitis in the past should contra-indicate salvarsan unless the patient can be kept under constant clinical supervision.—Sellei reports three cases of recent syphilis in which injection of salvarsan was soon followed by disturbances in hearing; in another case a syphilitic injury of the auditory nerve subsided under an injection of salvarsan.

119. See THE JOURNAL, April 23, 1910, page 1365.

122. **Typhoid Meningitis.**—Stühmer reports a case in which typhoid infection seemed to have localized exclusively in the meninges, typhoid bacilli being found in the cerebrospinal fluid obtained by lumbar puncture. The latter, he asserts, had an unmistakably curative effect on the meningitic symptoms. He has found eight cases of typhoid meningitis in the literature, in all but three of which the patients recovered.

123. **Inhalation of Nascent Mercury in Syphilis.**—Hubbes heats cinnabar (red mercuric sulphid) and has the patient inhale the fumes of the nascent mercury. In order to get rid of the sulphur he adds pure iron to the cinnabar; this binds the sulphur in the form of ferrous sulphid. Without the iron the sulphur forms the dangerous sulphur dioxid, but this is obviated by adding a corresponding amount of chemically pure iron. This nascent mercury seems to have an intensely toxic action on the spirochetes and combining with the hemoglobin follows them to the remotest parts in the body. He has seen the severest syphilis subside without recurrence to date under eight or ten sittings in the course of four or five days. He has had two and one-half years' experience with this method and has never had a failure, and affirms that with this method of using mercury there is no need to go farther afield for any other remedy.

Virchows Archiv, Berlin

February, CCIII, No. 2, pp. 161-320

125 Lipoma Containing Bone in the Tuber Cinereum. H. Zuckermann. Commenced in No. 1.
126 Lipoma in Pia Mater. B. Hecht.
127 Intestinal Emphysema. S. Ciechanowski.
128 *Obstruction of Mesenteric Blood-Vessels. (Verschluss der Mesenterialgefässe.) G. Bolognesi.
129 Congenital Membranous Stricture of the Prostatic Urethra. R. Lederer.
130 Thyroid Deformity. (Missbildungen der Schilddrüse.) P. Schilder.

128. **Obstruction of the Mesenteric Blood-Vessels.**—Bolognesi summarizes the clinical and experimental experiences in this line on record, and reports extensive personal research on rabbits.

Wiener klinische Wochenschrift, Vienna

February 16, XXIV, No. 7, pp. 227-262

131 Extracellular Action of Leukocytes. (Aphagozidie.) E. Weil.
132 Bismuth Paste in Treatment of Chronic Suppuration. (Behandlung chronischer Eiterungen mit Wismutpaste nach Beck.) H. H. Schmid.
133 Salvarsan. (Zur therapeutischen Bedeutung des Arsenobenzols.) W. Reiss and F. Krzysztalowicz. (Zur Applikationsweise des Salvarsans.) J. Hahn.
134 Comparative Study of Registration of Auricle Pulsation within the Esophagus and the Electrocardiogram. (Vergleichende Berechnung des Oesophagogramms mit dem Elektrokardiogramm.) W. Janowski.

Zentralblatt für Chirurgie, Leipsic

February 18, XXXVIII, No. 7, pp. 225-264

135 *Dangers of Diverting Urine into Intestine. (Zur Operation der Blasenektopie bzw. zur Versorgung des Harnleiters nach Blasenexstirpation.) K. Spannaus.
136 *Treatment of Ankylosis of the Patella. A. Schanz.

135. **Dangers of Implantation of Ureter in Intestine.**—Spannaus reports two cases in which he successfully implanted the ureters in a stretch of bowel according to the technics recently advocated by Fink and by Goldenberg. Theoretically, the operation seems promising but in both of his cases the diversion of the urine into the intestine proved disastrous, the intestine evidently having absorbed noxious elements of the urine with resulting uremia, while the urine had a distinctly injurious action on the bowel mucosa. His first patient, a man of 43, had the bladder removed on account of hemorrhagic papilloma; a receptacle for the urine was formed out of an excluded stretch of ileum fastened outside the peritoneum. The wound healed smoothly but diarrhea developed two weeks later to which the man succumbed. The second patient was a woman of 40 with cancer developing on exstrophy of the bladder. The ureter was implanted in the excluded stretch of ileum and the wound was healing when symptoms of uremia became manifest and the woman died the seventh day.

136. **Ankylosis of the Patella.**—Schanz comments on the unsatisfactory results of the present methods of treating adhesion of the patella to the femur. When the adhesion is broken up, it has been only a question of time before the parts grew together again. This is avoided by the simple device of transferring the bursa between the patella and the skin to the space between the patella and the femur—thus merely changing the position of the bursa from the front to the back of the patella. He has done this in two cases and the procedure was so simple and easy and the result so ideal that he commends it for general adoption in treatment of ankylosis of the knee. The nutrition of the skin over the patella did not seem to suffer in the least in his two cases after removal of the bursa between.

Zentralblatt für Gynäkologie, Leipsic

February 18, XXXV, No. 7, pp. 257-296

137 Care of Wound After Abdominal Hysterectomy. (Zur Wundversorgung bei der abdominalen Radikaloperation.) W. Hannes.
138 Drainage of Abdominal Cavity. (Was beabsichtigen wir mit der Bauchhöhlendrainage zu erreichen?) A. Sippel.
139 *Progress or Going Backward? (Vermeintlicher Fortschritt und Rückzug.) E. Roth.

139. **Progress Forward or Backward?**—Roth thinks that the time has come to take stock of the boasted progress of the last fifteen years in medicine and see whether all of it can be regarded as an actual onward advance. Science has not escaped the blight of restlessness and haste characteristic of the age. New conceptions and methods are constantly being promulgated in the medical press and they are hailed as progress on account of the modern longing for change, but whether they really represent progress is another question. He strives to answer this in regard to allowing parturients to leave the bed early, Cesarean section for placenta prævia, extraperitoneal Cesarean section, vaginal methods for operations on the uterus, and the transverse incision (*Fascienquerschnitt*)—all popular in certain quarters in Germany. His conclusions are to the effect that the drawbacks of allowing women to get up before the seventh or eighth day outweigh

the benefits, and a retreat should be sounded. The advantages of a little early exercise can be obtained without leaving the bed. Cesarean section as a systematic method of managing placenta prævia is another evil which should be abandoned, he argues, as also the tendency to too exclusive use of the vaginal route. The by-injuries with vaginal operations are increasing in number, as, for example, the case of the woman whose sterility it was sought to cure by a salpingostomy; during this there was so much hemorrhage that the uterus had to be removed to arrest it. Dührssen's mortality in 441 vaginal operations was 13, while Krönig's was only 2 in 485 abdominal operations. The transverse incision is also proving unsatisfactory on account of the difficulty of restoring anatomic conditions afterward, as he shows by statistics from various clinics. Here, too, he declares, a retreat should be sounded. The enthusiasm for extraperitoneal Cesarean section has also subsided as it has been shown that it is not suited any better than the classic technic for suspicious cases. So of all this boasted progress nothing, he declares, has stood the test of time.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 7, XXXII, No. 17, pp. 179-186

140 Pathogenesis of Acromegaly. G. A. Pari.

February 12, No. 19, pp. 195-210

141 Importance of Stomach Content in Dubious Cancer Cases. (Importanza dell'esame del contenuto gastrico nelle forme gastro-intestinali delle persone avanzate in eta, progressivamente gravi.) L. Marchetti.

Policlinico, Rome

February 12, XVIII, No. 7, pp. 197-228

142 Autolysates of Tissues in Treatment of Tumors. G. Fichera.
143 Restoration of Duct of Steno. (Escisione di un tratto di condotto di Stenone e reintegrazione del canale.) G. Buccolini.

Riforma Medica, Naples

February 13, XXVII, No. 7, pp. 169-196

144 *Formation of Specific Antibodies and Fixation of Complement in Malaria. L. Ferrannini.
145 *Possible Cause of Error in Hydrostatic Test of Infant's Lung. A. Cevidalli.

144. **Fixation of Complement in Malaria.**—Ferrannini has been applying the complement-fixation test in malaria with extracts of malarial spleens for the antigen. The findings were constantly negative, and the negative findings of other investigators with different technics all apparently confirm the fact that malarial infection does not induce the production of antibodies. This confirms the clinical experience that an attack of malaria does not confer immunity; there is no production of agglutinins or precipitins. This explains the difficulty in radically curing the disease and the susceptibility to subsequent attacks although it is possible that a racial immunity may be gradually developing. He is inclined to suspect possibly latent syphilis in the positive findings with the Wassermann test reported by DeBlasi in 52 per cent. of his malarial patients examined and by Boehm in about 30 per cent.

145. **Hydrostatic Test of Infant's Lung.**—Cevidalli reports actual experiences which demonstrate that if the fetus gets any of the amniotic fluid in its lungs, the sebaceous smegma in the fluid is liable to make the lung float whether the child has breathed or not.

Ugeskrift for Læger, Copenhagen

February 16, LXXIII, No. 7, pp. 212-251

146 *Toothache in the Toothless. (Tandsmerter hos Tandlose.) M. Melchior.

146. **Toothache in the Toothless.**—Melchior warns against ascribing to the teeth what may be neuralgia from pressure on the nerve by some minute focus in the jaw. Or the trouble may be a reflex neuralgia from constipation, uterine disease, etc. In one patient, the "toothache" had persisted for a long time involving the upper jaw on both sides and persisting after all the upper teeth had been extracted. On suspicion of syphilis, potassium iodid was then given when the pain soon entirely subsided. Careful study of the case, especially noting the definite point where the pain begins, may point to the exact site of the hidden causal lesion.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

INTRODUCTION TO PRACTICAL ORGANIC CHEMISTRY. Including Qualitative and Quantitative Analysis and Preparations. With Special Appendix on the London University Syllabus, and Schemes of Analysis for Stages 1 and 2 of the Board of Education Syllabus. By A. M. Kellas, B.Sc. (Lond.), Ph.D. (Heidelberg), Lecturer on Chemistry at the Middlesex Hospital, 1910. Cloth. Price, $1.35 net. Pp. 204, with 50 illustrations. New York: Oxford University Press, 1910.

A SYSTEM OF OPHTHALMIC OPERATIONS. Being a Complete Treatise on the Operative Conduct of Ocular Diseases and Some Extraocular Conditions Causing Eye Symptoms. Edited and Partly Written by Casey A. Wood, M.D., C.M., D.C.L., Late Professor of Ophthalmology and Head of the Department, Northwestern University Medical School. Complete in Two Volumes. Volumes I and II. Cloth. Price, $15. Pp. 1824, with 968 illustrations. Chicago: Cleveland Press, 1911.

LA BASE DE TOUTE RÉFORME. Santé, Richesse et Liberté Assurées à la Societé et à Chaque Individu par l'Alimentation Rationnelle. Exposé concis de la question alimentaire à la lumière des découvertes récentes de la physiologie et de l'anatomie humaines et comparées, de la chimie, de la géologie, de l'historie et de la philosophie. Par Otto Carque. Paper. Price, 2 francs. Pp. 85, with illustrations. Paris: A. Maloine, 25-27, rue de l'Ecole de Médecine.

A TEXT-BOOK OF GYNECOLOGIC SURGERY. By Comyns Berkeley, M.A., M.D., B.C.Cantab., Gynecologist and Obstetrician to the Middlesex Hospital, and Victor Bonney, M.S., M.D., B.Sc.Lond., Assistant Gynecologist and Assistant Obstetrician to the Middlesex Hospital. Cloth. Price, $5 net. Pp. 720, with 392 illustrations. New York: Funk & Wagnalls Co., 1911.

DER LUPUS: SEINE PATHOLOGIE, THERAPIE, PROPHYLAXE. Für den praktischen Gebrauch geschrieben. Von Prof. Dr. L. Philippson, Direktor der Dermatologischen Universitätsklinik zu Palermo. Aus dem italienischen Manuskript übersetzt von Dr. Fritz Juliusberg. Paper. Price, 2 marks. Pp. 42, with 14 illustrations. Berlin: Julius Springer, 1911.

HISTORY OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION. With Biographies of its Presidents, Complete Roster of its Officers, Programs of its Meetings, and the Past and Present Laws Relating to the Practice of Medicine in Mississippi. Cloth. Pp. 171. Dr. E. F. Howard, Secretary, 506 First National Bank Building, Vicksburg, Miss., 1910.

FOODS AND THEIR ADULTERATION. Origin, Manufacture and Composition of Food Products; Infants' and Invalids' Foods; Detection of Common Adulterations, and Food Standards. By Harvey W. Wiley, M.D., Ph.D. Cloth. Second Edition. Price, $4 net. Pp. 641, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

NEW YORK STATE LIBRARY YEAR-BOOK OF LEGISLATION, 1908. Edited by Clarence B. Lester, Legislative Reference Librarian. Legislation Bulletins 37, 38 and 39, Digest of Governors' Messages 1908, Index of Legislation 1908, Review of Legislation 1907-1908. Cloth. Price, $1. Pp. 513. Albany: University of the State of New York, 1910.

DIAGNOSTIC AND THERAPEUTIC TECHNIC. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic. Cloth. Price, $4 net. Pp. 775, with 815 illustrations. Philadelphia: W. B. Saunders Co., 1911.

PHOTOGRAPHIC ATLAS OF RADIOGRAPHY OF THE MASTOID REGION AND OF THE NASAL ACCESSORY SINUSES. By Joseph C. Beck, M.D., Clinical Professor of Oto-Laryngology, College of Physicians and Surgeons, University of Illinois. Half Morocco. Price, $8. St. Louis: The Laryngoscope Co., 1911.

ACUTE ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS). A Précis by Wade H. Frost, Passed Assistant Surgeon. Prepared by Direction of the Surgeon General. Pub. Health Bull. 44, February, 1911. U. S. P. H. and M.-H. S. Paper. Pp. 52. Washington: Government Printing Office, 1911.

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. Für die Praxis Dargestellt. Von Dr. J. Veit, Professor und Direktor der Universitäts-Frauenklinik in Halle a.S., Geh.Med.-Rat. Paper. Price, 8.20 marks. Pp. 242, with 34 illustrations. Berlin: S. Karger, Karlstrasse 15, 1911.

PUBLIC HYGIENE. By Thomas S. Blair, M.D., Neurologist Harrisburgh, Pennsylvania, Hospital. Assisted by Numerous Contributors. In Two Volumes. Volume I and II. Cloth. Price, $10 net. Pp. 644, with 158 illustrations. Boston: Richard G. Badger, (1911).

REPORTS OF THE TRUSTEES, RESIDENT OFFICERS AND VISITING COMMITTEE OF THE MAINE INSANE HOSPITAL AND EASTERN MAINE INSANE HOSPITAL. For the Year Ending Nov. 30, 1910. Paper. Pp. 42, with illustrations. Henry W. Miller, M.D., Superintendent, 1911.

HAND-BOOK OF THE SURGERY OF THE KIDNEYS. By W. Bruce Clarke, M.A., M.B. (Oxon.), F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital. Cloth. Price, $4 net. Pp. 199, with 50 illustrations. New York: Oxford University Press, 1911.

TWENTY-EIGHTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF INDIANA. For the Fiscal and Board Year Ending Sept. 30, 1909. Statistical Year Ending Dec. 31, 1909. To the Governor. Cloth. Pp. 638. J. N. Hurty, Secretary, Indianapolis, Ind.

DIGITALIS STANDARDIZATION AND THE VARIABILITY OF CRUDE AND OF MEDICINAL PREPARATIONS. By Worth Hale. Hyg. Lab. Bull. 74, January, 1911. U. S. P. H. and M.-H. S. Paper. Pp. 53. Washington: Government Printing Office, 1911.

REPORT OF THE SUPERINTENDENT MINNESOTA SCHOOL FOR FEEBLE-MINDED AND COLONY FOR EPILEPTICS. Biennial Period, Ending July 31, 1910. Paper. Pp. 235, with illustrations. A. C. Rogers, M.D., Superintendent. 1910.